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Creating a More Efficient Financial System: Challenges for Bangladesh

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Abstract: While Bangladesh has embarked on a path to reform its financial system, most prominently by privatizing its government-owned banks, the Nationalized Commercial Banks (NCBs), a sustainable long-term expansion of the financial system requires a more substantial change in the role of government. Using recent research and international comparisons, this paper argues that the government should move from its role as an operator and arbiter in the financial system to a facilitator role. This implies not only divestment from government-owned banks, but also de-politicization of the licensing process and a market-based bank failure resolution framework that focuses on intermediation and not on the rescue of individual institutions. Most importantly, the government should move away from the implicit guarantee for depositors and owners to applying the existing limited explicit deposit insurance for depositors, while simultaneously relying more on market participants to monitor and discipline banks instead of micro-managing financial institutions. This redefinition of government's role should not be limited to the banking system, but applies to other segments of the financial system, such as capital markets and the micro-finance sector, and should be seen as an essential element in the governance reform agenda and in the movement from a relationship-based economy to a market and arms-length economy.

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1. Finance as key to faster economic development

Bangladesh has experienced fast economic growth over the past years, with an average real GDP growth rate of 5.3% over 2000-2004. While population growth of 1.7% has resulted in average annual real GDP per capita growth of only 3.5% over this period, this is still higher than the 1.8% that the average low-income country enjoyed over the period. At this stage, it is crucial to design and implement policies that allow Bangladesh not only to sustain the recently achieved growth rates, but to accelerate economic development and achieve middle-income status within a generation. Among the policies identified by researchers to be associated with faster economic growth are policies that foster a sound and effective financial system. However, there is a large variation across countries in the efficiency with which financial institutions and markets reduce transaction costs and information asymmetries, with important repercussions for economic growth and development.

Countries with better developed financial systems, i.e. financial markets and institutions that more effectively channel society's savings to its most productive use, experience faster economic growth. [1] Table 1 and Figure 1 summarize a well-established body of empirical evidence; countries with higher levels of credit to the private sector relative to GDP experienced higher average annual real GDP per capita growth rates over the period 1980 to 2003. [2] Private Credit and other factors associated by the literature with economic growth explain 51% of variation in real GDP per capita growth. [3] The log of initial GDP per capita enters significantly negative, confirming the conditional convergence of countries' real GDP per capita, while

[1] To be sure, there is *also* a feedback of faster economic growth on the development of the financial system.
[2] Private Credit is a standard measure of financial intermediary development and is the ratio of claims by deposit money banks and other financial institutions on the private, domestic non-financial sector relative to GDP. Private Credit was 173% in the U.S. in 2003, but only 2% in Mozambique.
[3] The set of explanatory variables follows a standard regression set-up from the finance and growth literature, as used e.g. in Beck, Levine and Loayza, 2000).

average years of schooling, an indicator of accumulated human capital, enters positively and significantly. While population growth enters negatively and significantly, none of the other variables often associated with economic growth enters significantly.

The relationship between financial intermediary development and economic growth is not only robust to controlling for other factors that are associated with economic growth, but to controlling for the reverse causation from faster economic growth to financial development and to the relationship being driven by a third factor. While Figure 1 shows the relationship between private sector lending and GDP per capita growth, other measures of financial development, such as M2 to GDP or the turnover ratio in stock markets, yield similar results (Levine , Loayza and Beck, 2000; Beck and Levine, 2004). These findings are confirmed by cross-country, panel and by time-series estimation techniques (see Levine, 2005 for an overview).

The relationship between Private Credit and GDP per capita growth is not only statistically, but also economically significant. The results in Table 1 suggest that a doubling of private sector lending to GDP in Bangladesh over the period 1980 to 2003 from 22% to 44% would have resulted in 0.7 percentage points higher growth, or 2.7% instead of 2%.[4]

Financial markets and institutions arise to alleviate market frictions that prevent the direct pooling of society's savings and channeling to investment projects. Well developed financial systems ease the exchange of goods and services by providing payment services; help mobilize and pool savings from a large number of investors; acquire and process information about enterprises and possible investment projects, thus allocating society's savings to its most productive use; monitor investments and exert corporate governance; and help diversify and reduce liquidity and intertemporal risk (Levine, 1997 and 2005).

[4] Such counterfactuals have to be interpreted with caution as the coefficients indicate marginal effects from which we are extrapolating to discrete changes. Further, this counterexample serves an illustrative purpose; it does not actually tell us how to achieve higher growth rates.

Financial development is not only pro-growth, but also pro-poor. Figure 2 shows the relationship between Private Credit and the average annual change in Headcount – the share of population living on less than one dollar a day – over the period 1980-2000. The graph is based on a regression of the annual growth rate of the Headcount on Private Credit, GDP per capita growth and the log of initial Headcount (Beck, Demirguc-Kunt and Levine, 2004). By controlling for average economic growth we thus control for the positive effect that financial intermediary development has on poverty reduction through faster economic growth.[5] The negative relationship between Private Credit and changes in Headcount even after controlling for economic growth thus suggests that financial intermediaries have a positive impact on the poor beyond its impact on overall economic development. As shown by Beck et al. (2004), this relationship is robust to controlling for other country characteristics such as government consumption, inflation, openness and population growth, as well as to controlling for reverse causation and simultaneity bias. As in the case of the finance and growth relationship, the importance of finance for poverty reduction is not only statistically significant, but also economically. Bangladesh would have experienced a greater poverty reduction had it had a higher level of Private Credit over the past 20 years.

While Table 1 and Figures 1 and 2 show the importance of private sector lending for economic growth and poverty alleviation, Private Credit is not a policy variable itself. To the contrary, bigger is not always better. A rapid increase in private sector lending, not supported by the macroeconomic, contractual and informational framework discussed below, can result in fragility and banking crises, as experienced by many countries over the past 30 years (Demirguc-Kunt and Detragiache, 1999; and Caprio and Klingebiel, 1997).

[5] Changes in poverty can be decomposed into economic growth and changes in income inequality (Bourguignon, 2004). Kraay (2006) shows that the larger part of poverty changes can be explained by economic growth.

The remainder of the paper is organized as follows. Section 2 offers some time series evidence for the finance-investment-growth nexus in Bangladesh. Section 3 compares Bangladesh's financial system with a number of comparator countries and regional and income group averages. Section 4 discusses the importance of the macroeconomic environment and of the contractual and informational framework for financial intermediation and discusses achievements and challenges for Bangladesh in this area. Section 5 presents three different views of government's role in the financial system and analyzes the role of the Bangladeshi government in its financial system and recent development. Section 6 suggests a reform agenda for Bangladesh's financial sector and section 7 offers conclusions.

2. Finance and growth in Bangladesh – a time series analysis[6]

Financial development indicators, such as Private Credit, Total Deposits and M2 display an increasing trend for Bangladesh over the period 1975 to 2005, suggesting financial sector deepening over this period (Figure 3 and Table 2). However, it is also clear that there is a structural break in 1991, explained by the Financial Sector Reform Program (FRSP), which was launched in that year and aimed at going from a controlled if not repressed to a more market-based financial system. Specifically, interest rate controls and credit quota were to be reduced under this program. Comparing the financial development indicators over five-year periods shows that they first rapidly increased before a reversal set in the late 1980s and early 1990s and another improvement from the mid-1990s onward. Figure 3 also shows the positive correlation between the financial development indicators and the investment to GDP ratio as well as GDP per capita. This positive correlation, however, does not imply causality between these variables.

[6] This section is a summary of Rahman (2005).

In order to disentangle the causality relationships between financial development, the investment to GDP ratio and GDP per capita growth, we apply a structural vector autoregression (SVAR) that imposes long-run structural restrictions on the relationship between the different variables (Blanchard and Quah, 1989). Specifically, we posit that the short-term real lending rate impacts financial development, the investment to GDP ratio and GDP per capita. Financial development, in turn, impacts the investment to GDP ratio and income per capita, while the investment to GDP ratio only impacts directly GDP per capita.[7] As the real lending rate is found to be non-stationary, first differences are applied for this variable. Annual data are used to estimate the regression system and lags of explanatory variables are included based on the Akaike information criterion making all residuals white noise.

The results in Table 3 suggest that financial development has a statistically significant long-run positive impact on both the investment-GDP ratio as well as on per capita GDP.[8] A one percent positive shock to financial development will generate a positive impact of about 0.15 percentage points on the investment to GDP ratio and a positive impact of about 0.22 percentage points on per capita income. The finding of a positive impact of financial development on per capita income even after controlling for the indirect impact through investment activity suggests that financial development enhances both investment and resource allocation. The estimated results also indicate that there is a positive and significant relationship between investment activities and per capita income. In the long-run a one percent positive shock to the investment-GDP ratio will generate a positive impact of about 0.22 percentage points on per capita income. The long-run response of financial development, investment and per capita income with respect to real lending rate changes, however, do not appear with the expected signs, as the results

[7] Appendix 1 shows the exact derivation of this model.
[8] Two other indicators for financial development, such as total deposits to GDP and M2 to GDP produce similar results regarding financial development—economic growth nexus.

suggest a positive relationship between changes in the real lending rate and financial development, the investment to GDP ratio and per capita income.

The positive relationship between financial development, the investment to GDP ratio and per capita income is driven by the post-FSRP period 1991 to 2005. The results for the subsample 1991 to 2005 closely match those for the overall sample period. Further, the real lending rate is significantly and negatively correlated with financial development, investment activity and per capita income in the post-FSRP subsample. However, the regression results do not suggest a significant relationship between financial development, the investment to GDP ratio and income per capita for the pre-FSRP period 1976 to 1991. Whereas the investment to GDP ratio is positively and significantly related with per capita income over this period, financial development enters the long-run responses of investment-GDP share and income per capita with insignificant and negative coefficients.

The insignificant relationship between finance, investment and income for the period of financial repression matches cross-country experience discussed below and carries some first important policy conclusions. Specifically, a financial system that relies heavily on nationalized banks, interest rate controls and directed credit cannot fulfill its important role in channeling society's savings into investments and fostering economic growth.

3. Bangladesh's financial system in international comparison

The development and efficiency of Bangladesh's banking system is at a comparable level with other South Asian countries and at a higher level than the average for low-income countries, while other segments of the financial system, such as the insurance sector and the stock market, are substantially less developed than in comparator countries. Further, the banking sector has

been plagued by systemic distress over the last 20 years. Both the banking system and the stock market are less developed and less efficient than in East Asia.

To compare financial intermediary development – the development of banks and bank-like financial institutions – we focus on three aggregate indicators, which are Private Credit– claims on financial institutions on non-financial domestic sectors relative to GDP, Liquid Liabilities - currency plus demand and interest-bearing liabilities of banks and non-bank financial intermediaries relative to GDP – and Bank Deposits– the ratio of demand, savings and time deposits in deposit money banks to GDP. Table 4 shows that while all three indicators are lower than in India for 2004, they are at similar or higher levels than in Indonesia, Pakistan or the average for South Asian countries. The three indicators are significantly higher than the averages for low-income countries – not surprising, given the low level of financial intermediation in many low-income Sub-Saharan African countries. Not surprisingly, the three indicators are below the average for East Asian countries whose financial systems have recovered by now from the 1997 crisis and whose financial systems have contributed to achieving middle-income status. Finally, the loan-deposit ratio stands at an exceptional high 80%, i.e. four-fifths of banks' deposits are intermediated into private sector loans. This is even higher than the East Asian average. However, this ratio has to be interpreted with caution, as the government directly competes with banks through the National Savings Schemes (NSS), which go straight into the government's budget, so that there is limited need for direct bank loans to government, as is the case in many other developing countries.[9]

[9] These NSS are mostly for three to five years of maturity and their sale is restricted to individuals. Their rate of return is significantly above that of bank deposits, especially since there seems to be a very low penalty for early liquidation. At the end of 2004, there were 349 billion Taka outstanding NSS, but only 182 billion Taka outstanding government papers.

Overhead costs and net interest margins – two negative indicators of banking system efficiency - are at comparable levels as in other South Asian and East Asian countries and significantly lower than the average for low-income countries. Overhead costs are banks' total operating costs relative to total assets while net interest margins are net interest revenue (i.e. interest revenue from loans minus interest costs from deposits) relative to total earning assets.

Comparing access to and use of banking services in Bangladesh with other countries in the region and an average for low-income countries suggests that banking penetration is adequate for the level of financial and economic development. Here, we use a new database on access to and use of banking services, compiled from regulatory entities and public information for the years 2003/2004 and discussed in Beck, Demirguc-Kunt and Martinez Peria (2005). Bangladesh has 47 bank branches per 1,000 square kilometers and four branches per 100,000 people. Figure 4 shows that geographic branch penetration is significantly higher than in comparator countries - mostly due to the high population density – while demographic branch penetration is at similar or higher levels than in Pakistan, Nepal and the average low-income country, but significantly below the level observed for India, Indonesia and Sri Lanka. ATM penetration is significantly lower, with less than one ATM per 1,000 square kilometers and one million people. Figure 5 shows that ATM penetration – both in geographic and in demographic terms – is significantly lower than in any comparator country with the exception of Nepal, which suggests limited use of technology in banking sector outreach. Figure 6 shows that the number of loan and deposit accounts per capita – a positive indicator of the use of banking services – is above the level in Pakistan and the average low-income country – while Figure 7 shows that the loan-income and deposit-income ratios – the average loan or deposit account size relative to GDP per capita and thus negative indicators of outreach – are below the levels in Pakistan and the average low-

income country.[10] Bangladesh has 55 loan and 229 deposit accounts per 1,000 people and the average loan-income (deposit-income) ratio is 5.2 (1.6).[11] While these indicators are only for the formal banking sector, limited data available for the microfinance sector suggest that access to and use of formal financial services is higher than in many comparable countries. Honohan (2004) shows that Bangladesh is the country with the highest microfinance penetration (borrowing clients constitute 13.1% of total population) in the world, twice that of Indonesia, the country with the second highest penetration rate (6.7%).[12]

Other segments of the financial system are significantly less developed than the banking system. There is a small but growing non-bank financial sector comprising leasing and finance companies. The indicators of the size and activity of the stock market show the picture of a small, inactive and stagnant market. Bangladesh's stock market capitalization relative to economic activity is miniscule as is trading on the exchange, which makes the turnover ratio – trading relative to capitalization – also lower than in any comparator country. The shares of financial institutions – mandated by law to list – dominate the Dhaka stock exchange[13]; in November 2005, they constituted 56% of market capitalization and 62% of trading. There were only two Initial Public Offerings (IPOs) of non-financial companies in 2005 and none in 2004. There are few incentives to go public and the share of stocks of a typical company traded freely is very small (Sobhan and Werner, 2003). The insurance sector is small and inefficient – life and non-life insurance penetration (premiums relative to GDP) are at 0.37% and 0.20%, respectively, below the average for both low-income and the South Asian country average (Table 4). Further,

[10] Note that deposit and loan accounts per capita and deposit/loan-income ratio are not available for the other comparator countries in Figure 5.
[11] Beck, Demirguc-Kunt and Martinez Peria also predict the share of households with bank accounts from their branch and deposit data. According to this prediction, around 17% of the Bangladeshi population has access to a bank account, compared to 16% in Pakistan and 37% in Malaysia.
[12] Note that these data are an estimate as they are based on data from individual MFI; there could be a downward bias if not all MFIs in a country report and an upward bias if borrowers are clients of several MFIs.
[13] There is a second smaller stock exchange in Chittagong.

life insurance companies undertake reverse maturity transformation, i.e. transform long-term liabilities into short-term assets, such as bank deposits, which can be partly explained by the reluctance to issue long-term savings instruments that would have to compete with the NSS. There are few private pension funds and mutual funds whose development is most likely prevented by the existence of the NSS that offer rates above deposit interest rates in the banking sector. Both the pension and mutual fund industry are dominated by public pension schemes and by the Investment Company of Bangladesh (ICB) that also holds a large part of the shares on the Dhaka Stock Exchange.[14] Unlike private funds, ICB is not subject to Securities and Exchange Commission (SEC) supervision and has fewer restrictions on its activities, so that private institutions do not face a level playing field (Sobhan and Werner, 2003). This lack of privately owned institutional investors has certainly negative repercussions for corporate governance and stock market liquidity.

The picture painted by the aggregate indicators is confirmed by firm-level indicators of financing patterns. Firms in Bangladesh finance a lower share of their working capital and their investment with retained earnings than firms in any of the comparator countries or the average firm in the average South Asian, East Asian or low-income country, thus relying more on external finance (Figures 8 and 9). Differentiating between different sources of external finance, Bangladeshi firms finance a larger share of working capital with banking credit, while private equity and the sales of stocks play a miniscule role in the financing of working capital and investment. While financing a larger share of their working capital and investment with banking credit, firms in Bangladesh report higher obstacles due to access to and cost of external finance than firms in Pakistan, Sri Lanka, Indonesia and the average firm in the average South Asian or

[14] It is estimated that ICB holds 20% of shares through their mutual funds and own accounts as brokerage firm (ADB, 2004)

East Asian country and even higher than the average firm in the average low-income country (Figure 10).[15] While the cross-country comparison of subjective assessments of financing obstacles has to be interpreted with caution, the fact that they paint such a different picture than other quantitative evidence suggests that we might have to look beyond aggregate indicators and firms' financing patterns to assess the contribution of the financial system to economic development and poverty reduction in Bangladesh.

While the aggregate indicators of financial intermediary development suggest a banking system that might be able to support Bangladesh's move from a low- to a middle-income country, a closer look identifies a sector that is only beginning to emerge from a crisis. Applying one of the criteria for a systemic banking crisis (aggregate NPL more than 10% of aggregate loan portfolio), Bangladesh has been in a crisis since 1983. Currently, gross NPLs stand at 16% and NPLs net of loan provisions stand at 8% of total loans.[16] This aggregate number, however, hides significant discrepancies across different groups of banks. The government-owned banks or NCBs (Nationalized Commercial Banks) constituted 40% of total banking sector assets in 2004 and showed a gross NPL ratio 25.3%. The total capital gap, and thus contingent fiscal loss, in the NCBs was estimated at two to four percent of GDP in 2003. The private commercial banks (PCBs) constituted 51% of total banking system assets and showed an aggregate gross NPL ratio of 8.5%. But even within the PCB segment of the banking system, there is substantial variation, with several older privately-owned banks having been under intensive Bangladesh Bank care for

[15] Although these are subjective assessments, note that Beck, Demirguc-Kunt and Levine (2006) find that in countries where firms report higher financing obstacles, industries that depend more on external finance grow relatively more slowly and investment resources are reallocated more slowly as demand changes across industries. Also, Beck, Demirguc-Kunt and Maksimovic (2005) find a significant negative impact of financing obstacles on firm growth.

[16] Other criteria commonly used to identify a systemic banking crisis include: (i) emergency measures were taken to assist the banking system (such as bank holidays, deposit freezes, blanket guarantees to depositors or other bank creditors), (ii) large-scale nationalizations took place, or (iii) the fiscal cost of the rescue operations was at least 2 percent of GDP. Compare Demirguc-Kunt and Detragiache (2005).

over a decade due to continuous problems and with other PCBs showing healthy balance sheets and growth.[17] The smallest component of the banking system is made up by 10 foreign-owned banks that are present in the form of branches, account for 9% of total banking system assets and have an aggregate gross NPL ratio of only 1.5%.

4. Three pillars of an effective and stable financial system[18]

This section discusses three building blocks for a sound and effective financial system and tries to benchmark Bangladesh. We will show that Bangladesh has made great progress in macroeconomic stability, but still has a long way to go in building the contractual and informational framework in spite of some promising reforms.

Financial contracts consist of an exchange of money today for the promise of money tomorrow, thus an enormous leap of faith into an uncertain future. The intertemporal nature of the contract and several market frictions make financial contracts critically different from other contracts in a market-based economy. First, there is uncertainty whether today's contracted repayment (such as interest or insurance payout) or expected repayment (such as dividends or capital gains in the case of equity claims) will be the same in terms of tomorrow's consumption units due to inflation. Second, information asymmetries between borrowers and lenders make the assessment of viable investment projects difficult and lead to principal-agent problems and moral hazard risks, i.e. the possibility that the borrower will not act in the best interest of the lender.

[17] There were several waves of PCBs licensed at different points in time, referred to as generations. The first generation of PCBs was licensed during 1972 and 1989, the second during 1991 and 1996 and the third between 1999 and 2001.

[18] This and the following section draw heavily on Beck (2006).

Similarly, market frictions prevent the costless enforcement of contracts, again increasing incentives for borrowers to deviate from contracted promises. [19]

These market frictions give rise to financial institutions and markets. Financial institutions take on the role of "delegated monitors" (Diamond, 1984) for savers vis-à-vis borrowers; financial markets allow the transformation of claims on multi-year illiquid investment projects into liquid tradable securities. Financial institutions acquire and process information about investment projects on behalf of their depositors, while prices in financial markets reflect different information and opinions on new ideas and projects. While market participants have developed techniques to overcome market frictions, the government has an active role to play in providing the "infrastructure" for financial service provision, i.e. the rules within which firms and household contract with each other and perform financial transactions.

4.1. Macroeconomic stability

Given the intertemporal character of financial contracts, macroeconomic stability is a prerequisite for financial development and a first building block for an effective financial system. A low and stable rate of inflation provides incentives for financial rather than non-financial forms of savings. It is also conducive to long-term contracting and thus long-term savings and investment by providing monetary certainty. Savers are more likely to entrust their savings for a given interest rate if they can be ensured the expected return in terms of real consumption units. Similarly, monetary stability allows investors to adequately compute the return on projects and commit to payments in real terms. Theory and empirical cross-country comparisons have shown that countries with lower and more stable inflation rates experience higher levels of banking and stock market development (Boyd, Levine and Smith, 2001). This is illustrated in Figure 11,

[19] See Levine (1997, 2005) for an overview over theoretical models discussing these market frictions.

which plots Private Credit over the period 1980 to 2003 against the average annual inflation rate for the same period. Similarly, a controlled fiscal government deficit can enhance financial sector deepening by avoiding crowding-out effects of government spending needs on private sector lending and investment.

Bangladesh has made great progress in macroeconomic stability, as indicated in Table 5. Inflation – as measured by the Consumer Price Index (CPI) - has been in the single digits over the last couple of years and while the government deficit has been relatively high in international comparison, it is lower than in many regional comparator countries and has been stable over the last couple of years. Further, an increasing share of the deficit has been financed from concessional donor aid leading not only to lower cost for the government, but also to less crowding out of private sector lending (Ahmed, 2005).

4.2. Contractual framework

Financial contracts depend on the certainty of legal rights of borrowers, creditors and outside investors and the predictability and speed of their fair and impartial enforcement. Private property rights and enforcement of contracts – both vis-à-vis other private parties and vis-à-vis the government - are thus a second crucial pillar of an effective financial system. Savers are only willing to relinquish control over their savings if they can be sure to receive principal and contracted interest in return. Outside financiers – be they equity or debt holders – will only be willing to invest in companies and projects if their legal claims and rights are upheld. This points to both creditor rights and minority shareholder rights as being critical for external financing, as well as the role of corporate governance in both financial institutions and non-financial corporations. Shareholders do not only need sufficient information, but also the possibility to

influence company decisions directly through votes on critical corporate decisions and indirectly by determining members of the Board of Directors that will ensure that management acts in the best interest of the equity holders. Critical in the relationship between minority shareholders and controlling shareholder and management are often problems of looting and of tunneling, i.e. the possibility for the controlling shareholder to remove assets outside the firms, and the remedial actions that the legal system offers minority shareholders against them (Johnson et al., 2000). Creditors will have to be ensured of the fair and quick enforcement of their contracts if the borrower defaults. This implies the possibility of both enforcing contracts outside bankruptcy as well as maintaining creditor rights within the bankruptcy procedure. Effective legal systems provide for timely, efficient and impartial resolution of insolvent borrowers through the efficient liquidation of unviable enterprises and the rehabilitation of viable businesses.

International comparisons have provided ample evidence for the critical role of legal system efficiency and its different elements for financial sector development (La Porta et al., 1997; see overview in Beck and Levine, 2005). The effect of legal system efficiency on financial intermediation is illustrated in Figures 12 to 14, where we show the positive relationship between Creditor Rights and Private Credit (Figure 12), the negative relationship between the time period it takes to enforce contracts and Private Credit (Figure 13) and the positive relationship between better protection of minority shareholder rights and the market capitalization in stock markets (Figure 14).

While Bangladesh has made some progress in the contractual framework over the past years, there is still significant room for improvement. Bangladesh still is ranked as one of the countries with the highest degree of corruption. While the creditor and minority shareholder rights are relatively strong on the book (Figures 11 and 13), the enforcement is weak. Lenders

and borrowers have to deal with an ineffective collateral system for movable and immovable assets. Land titling is hampered by poor and unreliable records, high fees, and fraud. The movable collateral regime is effectively available only for limited liability companies, as these are the only ones that can register charges with the Registry of Joint Stock Companies (Meagher, 1998). This effectively excludes most of the small and micro enterprises from using such assets as collateral. These problems have increased reliance of lenders on personal guarantees from company directors. The bankruptcy legislation is rarely used in practice as a tool to resolve corporate distress, with less than half of the cases in the two bankruptcy courts actually being declared bankrupt at the end of the process (ADB, 2004). This is partly due to the stigma attached to bankruptcy and possible criminal prosecution of bankrupt debtors (Sobhan and Werner, 2003). While some progress has been made with the recent introduction of the money loan courts that allow a faster and less bureaucratic enforcement of claims, it is still too early to say whether this reform has significantly impacted the availability and cost of loans. Further, appeals to the high court still pose a major bottleneck to the quick resolution of claim resolution as they are to wait in queue with other cases (Sobhan and Werner, 2003).

The deficiencies in the contractual framework are reflected in cross-country benchmarking. Bangladesh is ranked 65th in the Ease of Doing Business Indicator (out of 155), a rank that is driven by deficiencies in the conditions for registering property where Bangladesh ranked 151st. Bangladesh is ranked 75th in enforcing contracts and 77th in closing a business.

4.3. Informational framework

As financial markets and institutions arise due to information asymmetries that prevent direct interaction between multiple savers and investors, effective financial intermediation

depends on tools to reduce these information asymmetries. The informational framework is thus a third fundament for effective financial intermediation. International experience has shown that credit information sharing is important to reduce adverse selection problems and foster competition in the financial system. Credit registries that give easy and reliable access to both negative and positive information about clients can dramatically reduce the time and costs of obtaining such information from individual sources and therefore reduce the total costs of financial intermediation. Credit reporting makes borrower quality more transparent, which benefits good borrowers and increases the cost of defaulting on one's obligations. Credit registries are especially important for SMEs as their creditworthiness is harder to evaluate and they have less visibility and transparency relative to large enterprises. Consumer rights to access their information and challenge erroneous information have to be effectively protected to make such a system a widely acceptable part of the financial system infrastructure and balance consumer rights with efficiency considerations.

International comparisons have shown that countries with better developed systems of credit information sharing enjoy higher levels of financial development and their firms report lower financing obstacles (Japelli and Pagano, 2002; Love and Mylenko, 2003; Djankov et al., 2005, and Miller, 2003 for an overview). Figure 15 illustrates the positive relationship between the efficiency of credit information sharing and Private Credit.

Bangladesh has a well functioning public Credit Information Bureau (CIB), established in 1992 and housed in the Bangladesh Bank. It collects data from all banks and financial institutions that are regulated and supervised by Bangladesh Bank on a monthly basis on all borrowers, i.e. it collects both positive and negative information. While there is no unique borrower identifier, the wealth of information of individual borrowers seems to allow a relatively

good match. All financial institutions are required by law to obtain information about a borrower from the CIB before granting or renewing a loan. This provision was introduced in the effort to reduce non-performing loans in the banking system.

While the CIB has a long and positive track record, several shortcomings of the existing system should be noted. First, the system is still limited by the lack of computization. Second, banks effectively only obtain current information about existing borrowers, but no historic information, i.e. information about past payment performance. One can imagine defaulting borrower paying up to one institution before taking out new loans with another institution – the CIB reports do not seem to be able to capture such behavior. Third, only financial institutions participate in the information sharing agreement, other non-financial institutions such as utility companies, which are a source of valuable credit information about customers in other countries are excluded. Most importantly, however, the CIB has a stability focus – credit information sharing has the objective to prevent future loan losses, which is an important and valid aspect of credit information sharing. As important, however, is the function of credit information sharing in enhancing competitiveness and access to credit by allowing borrowers to create "reputation collateral", i.e. allow them to use their track record as reference in future loan applications. The lack of historical information limits such a role of the CIB. More importantly, the threshold of 50,000 BDT (800 USD) excludes the class of borrowers that around the world rely most on reputation collateral – small and opaque enterprises. While technical problems are certainly recognized, a move towards including all borrowers irrespective of the size of their loans should be envisioned in the medium-term. Another important step would be to link the existing CIB for banks and financial institutions to the credit registry to be created for MFIs. Finally, there does not seem any reason to prevent private credit information sharing, i.e. to change the legal

provisions to allow private institutions to provide such services. While it seems unlikely that such an industry would immediately flourish, it can be an important element in the move of the Bangladeshi economy from a relationship-based economy to an arms-length economy, which relies on numerous information brokers, including credit rating institutions and credit registries.

Similarly, more accurate and transparent financial statements can help reduce information asymmetries between borrowers and lenders. Financial statements that give an accurate picture of a firm's financial situation reduce screening and monitoring costs for financial institutions and increase the efficiency of resource allocation. Cross-country comparisons have shown a positive association of more transparent and comprehensive accounting standards with higher levels of financial development (Levine, Loayza and Beck, 2000 and La Porta et al., 1997). Similarly, transparent and more informative financial statements lower information costs for investors and can foster stock market development and liquidity (Levine, 2003).

A recent World Bank report noted in 2003 that "the accounting and auditing practices in Bangladesh suffer from institutional weaknesses in regulation, compliance, and enforcement of standards and rules." While all incorporated companies must file annual audited financial statements with the Registrar of Joint Stock Companies, there is no effective enforcement of the timely and accurate filing. A review of published financial statements revealed numerous compliance gaps. There is limited accounting and auditing capacity and numerous violations of professional ethical standards. While listed companies are subject to additional oversight by the SEC, there are legal and judicial constraints to effective enforcement of this oversight. Further, there seems little confidence in the financial reports issued by companies with no or perverse

price effects of such announcements (ADB, 2004).[20] More importantly, the costs of going public seem to surmount their benefits, as public firms are subject to more scrutiny by tax authorities.

5. The role of government in financial service provision

While most economists agree by now on the role of government in providing a stable monetary environment and government involvement in the contractual and informational framework, there has been an ongoing debate over the past decades on the role of government as financial service provider and on the regulation and supervision of financial service providers by government. This section presents three different approaches to the role of government: the laissez-faire view, the market-failure view and the market-enabling view. Finally, we will contrast these views with the current situation in Bangladesh.

5.1. The laissez-faire approach

Under the laissez-faire or invisible-hand approach, there is no role for government involvement in the financial system. Market discipline rules the relationship between banks and depositors and between banks and borrowers. Depositors and creditors of financial institutions monitor them and exercise market discipline by either withdrawing funds or demanding higher interest rates. Failing banks are taken over by more successful banks or are liquidated. Similarly, banks monitor and discipline borrowers; borrowers unable or unwilling to repay are liquidated or rehabilitated through a restructuring process. Under the pure laissez-faire approach, there is thus no role for government involvement. A modified laissez-faire approach stresses the importance

[20] Sobhan and Werner (2003) even quote the example where a bank's stock price increased after irregularities in its lending practices became public, most likely due to manipulating transactions in the market.

of macroeconomic stability and the contractual and informational framework and sees a role for government in providing these necessary infrastructure elements for financial intermediation.

The laissez-faire approach has been criticized for ignoring market imperfections and failures that lead to a break-down of bank-depositor and bank-borrower relationships as envisioned in theory. Depositors are not able to monitor banks as they do not have the means to do so or the costs are too high relative to their claims vis-à-vis the banks. Especially small depositors have to be protected against loss of their life-time savings. Banks, on the other hand, have to be protected against runs by uninformed depositors that would force liquidation of long-term investment projects financed by bank loans. There are also market frictions in the bank-borrower relationships that prevent optimal resource allocation.[21] Financial institutions might not necessarily invest in the sectors with the highest social return; banks– due to their role as debt holders –are claimed to have an inherent bias toward conservative low-risk low return investments, stymieing innovation and growth. By acquiring inside information about firms, powerful banks can extract informational rents from firms, thus reducing their incentives to undertake profitable investment. Further, short-term profit-oriented banks might force borrowers into bankruptcy that suffer only from short-term liquidity problems or they might not even lend to borrowers with projects that require a long gestation period.

5.2. From market to government failures

Given market failures in the financial systems, the Bangladeshi government took a very active if not interventionist role in the financial system in the 1960s and 1970s, following the example of many other developed and emerging economies.[22] Through nationalization of all

[21] See Levine (2005) for a more detailed discussion.
[22] See Fry (1988) for a discussion of these policies and numerous examples in other countries.

banks the government hoped to enhance savings mobilization, direct credit to priority sectors, and make financial services affordable to larger parts of the population. Through interest rate controls the government hoped to reduce lending costs for borrowers, while credit quotas were supposed to guarantee that financial resources flowed to priority and underserved sectors, such as agriculture. Through specialized institutions, such as agricultural banks and industrial development finance companies, the government hoped to provide more financial resources for these sectors. As in many other countries, deposit insurance was introduced to prevent bank runs and protect small savers.

Government solutions to overcome market failures rely on two crucial assumptions. First, governments know better than markets; second, governments act in the best interest of society. Both assumptions relate to the public-interest view, the idea that public authorities maximize social welfare and have the necessary tools to do so.[23] Both assumptions have been proven wrong in Bangladesh as across the developed and developing world. Bureaucrats have turned out to have limited knowledge and expertise to run financial institutions and systems and they do not maximize society's welfare, but are rather subject to political and regulatory capture, i.e. influenced by the political sphere and the regulated entities, as hypothesized by the private-interest view.

Bureaucrats as bankers have failed almost everywhere, but especially in developing countries; economies with a higher share of government-owned banks experience lower levels of financial development, more concentrated lending and lower economic growth and are more likely to suffer systemic fragility (La Porta et al, 2001; Barth, Caprio and Levine, 2004). This is illustrated in Figure 16, which shows the negative association of Private Credit with the share of

[23] For a in-depth discussion on the public- and private interest views in the context of financial regulation and supervision, see Barth, Caprio and Levine (2006).

majority government-owned banks in the banking system. Bureaucrats have neither the market knowledge nor the right incentives to properly screen and monitor borrowers and thus ensure the allocation of society's savings to its most productive use. Being owner, borrower and regulator of an institution at the same time, governments face obvious conflicts of interest. Experience in Bangladesh as in many other countries has shown that government-owned banks are often used by politicians to finance commercially unviable government projects or state-owned enterprises. Politicians use government-owned banks for electoral purposes; experience across developing countries has pointed to increased lending in election years and especially to contested districts (Cole, 2005; Dinc, 2005). The resulting non-performing loans (NPLs) have resulted in large fiscal costs and often in banking crises as in the case of Bangladesh (Barth, Caprio and Levine, 2004; Caprio and Martinez Peria, 2003). Further, the negative impact of government-owned banks spreads often beyond these institutions to the rest of the sector: there are efficiency losses as private sector banks face less competition and governance problems often spread beyond government-owned banks. An explicit guarantee for government-owned banks is often equated with an implicit guarantee for privately-owned banks. Cross-country comparisons have shown that there are fewer possibilities for the private sector to monitor in countries with a higher share of government-owned banks (Caprio and Honohan, 2005). Below, we will discuss that this is exactly the situation in Bangladesh.

Worse than government ownership, however, can be a failed privatization process. Poorly designed and executed privatization processes can lead to fragility and banking crises as numerous examples have shown over the past 30 years. Studies of privatization processes have shown the benefits of privatizing government-owned banks, but also the pitfalls (compare Clarke, Cull and Shirley 2005 and other papers in the same issue). Among the lessons learned

from privatization of government-owned banks around the globe are that it is important to open the books early in the process to thus make the cost of continuous government ownership to the taxpayer clear to the public and thus potentially create political pressure for privatization. However, this also points to the recommendation to not recapitalize a bank before privatizing to thus not ease the political pressure to privatize. While privatization should not be delayed to minimize fiscal and efficiency losses, fire sales might lead to privatizations to investors that are not fit and proper or have not adequately assessed the situation of the bank, which might result in subsequent fragility. There are advantages to divest to a strategic investor who can bring the necessary management and financial know-how, especially in a weak institutional environment and to open the privatization process to both qualified domestic and foreign bidders. By selling to reputable foreign banks, financial systems can benefit from expertise and from additional resources. Finally, country studies have shown the advantages of full rather than partial privatization to reduce possible future government influence. By giving up any ownership stake, government signals that it does not plan to intervene after privatization and that it will not bail out the new private investors should things go wrong. Privatization, however, is not a panacea, as privatizing into a non-competitive environment where other elements of the framework discussed earlier are not in place will not necessarily bring benefits in terms of more private sector lending.

Credit quotas and interest caps and floors have impeded the efficient allocation of society's savings to its most productive uses and have especially hurt "smaller" depositors and borrowers (Fry, 1988). In case of binding ceilings, banks are prevented from charging adequate risk premiums for riskier and more opaque borrowers or from recovering fixed transaction costs through a mark-up on smaller loan amounts. Further, competition between credit institutions and

for more deposits is hampered as financial institutions have no incentives to become more efficient or to attract more deposits if they cannot finance more marginal customers. Similarly, given fixed transaction costs in financial intermediation, floors on deposit interest rates make savers with small transaction amounts unattractive for financial institutions. Credit quotas have resulted in fragmentation of credit markets and higher costs for non-priority sectors. In many cases, financial institutions have found ways around these restrictions, but at a high cost and with consequent efficiency losses.

While many countries have adopted systems of deposit insurance over the past decades with the intent to reduce the risks of bank runs, protect small depositors and thus create a stable and sound banking system, the moral hazard risks coupled with weak regulatory and supervisory frameworks have often resulted in the opposite. By bailing out not only small, but also large depositors and creditors, poorly designed deposit insurance schemes have reduced market discipline, which in the absence of effective bank supervision has often resulted in imprudent and unchecked risk taking by banks with subsequent fragility (Demirguc-Kunt and Detragiache, 2002; Demirguc-Kunt and Huizinga, 2004). Further, cross-country comparisons have not confirmed the assertion that deposit insurance is crucial for financial sector development; to the opposite, countries with more generous deposit insurance schemes are found to have lower levels of savings and private sector lending (Cull, Senbet and Sorge, 2005).

While strengthening of supervisors' intervention powers has been at the forefront of efforts improving the supervisory framework, there is little cross-country evidence that empowering supervisors alone will bring stability. There is evidence, however, that powerful bank supervisors might be associated with higher levels of corruption. Beck, Demirguc-Kunt and Levine (2006a) show that firms in countries with more powerful bank supervisors, i.e.

supervisors that directly monitor, discipline, and influence banks, are more likely to report major obstacles due to corruption in lending. On the other hand, a supervisory strategy that focuses on empowering private monitoring of banks by forcing banks to disclose accurate information to the private sector tends to lower the degree to which corruption of bank officials is an obstacle to firms raising external finance. Table 6 reports the results of a regression of Corruption in Lending on firm characteristics and other country characteristics. We also control for general financing obstacle to control for the fact that firms that report higher overall financing obstacles might put part of the blame on corruption. Supervisory power, which is a principal component indicator of 14 dummy variables proxying for specific power of bank supervisors to intervene in banks, enters positively and significantly. Private Monitoring, which is the principal component indicators summarizing the extent to which banks are forced to publish information and the absence of explicit or implicit deposit insurance, enters negatively and significantly.

While Bangladesh is not part of the Beck et al. (2006a) sample due to some missing firm-level variables, we can use the regression results to gauge the effect of powerful bank supervision in the case of Bangladesh. Bangladesh takes a value of 0.44 for Supervisory Power – Bangladesh Bank had 11 out of 14 powers summarized by this indicator in 1997 – while Private Monitoring takes a value of -0.80.[24] Bank supervisors are thus much more powerful in Bangladesh than in the average country, but supervision relies much less on monitoring and disciplining by market participants. 19% of all firms in Bangladesh reported corruption in lending as major obstacle to operation and growth, compared to 8% across the 37 countries in the Beck et al. sample. Were Supervisory Power and Private Monitoring at the sample means of

[24] Unfortunately, there are no data available in the more recent version of the Bank regulation database for Bangladesh.

zero, the regression result reported in Table 6 suggests that this share would fall to 13%, or by one-third, a quite significant effect.

5.3. Enabling markets – a new approach

Rather than replacing market failures with government failures, policies are required that address market failures directly and try to reduce market frictions. This new approach is not a laissez-faire approach as it does not leave the market to itself; rather, it relies on the government to enable and develop markets. It starts from the observation that frictions might prevent markets from functioning well or might even prevent markets from existing in the first place. However, this approach does not seek to replace missing or poorly functioning markets, but rather create the conditions for markets to emerge and function properly. It relies on private institutions to provide financial services efficiently but takes into account their incentive structure. This approach foresees a government that works with the market, but does not leave it to the market.

While the government should not be a direct provider of financial services under this new approach, it has a critical role in ensuring a competitive and contestable financial system. Cross-country comparisons have shown that countries with lower entry barriers into the financial system, fewer restrictions on banking and a higher share of foreign-owned banks have more competitive banking systems (Claessens and Laeven, 2004; Beck, Demirguc-Kunt and Maksimovic, 2004, Demirguc-Kunt, Laeven and Levine, 2004; Beck, Demirguc-Kunt and Levine , 2006b). Allowing or even encouraging entry by sound and prudent new institutions, whether they be domestic or foreign, is important to maintain contestability. But the role of the government might have to be even more active. Avoiding segmentation in the financial sector through expanding access to the payment system or the credit information sharing system

beyond the commercial banks to bank-like institutions such as cooperatives or regulated microfinance institutions can help the financial system cater to marginal customers in all financial services.

The financial safety net plays a critical role in supporting a stable and effective banking system. Given the maturity transformation – using deposits withdrawable at short notice to finance medium- to long-term loans – and given the limited transparency of financial institutions, banks have been subject to special regulation and supervision not applied to non-financial corporations. Given the put-option character of bank equity, bank shareholders participate only in the up-side risk of the bank business and have therefore strong incentives to take too aggressive risks, ignoring sound and prudent risk management. Effective bank regulation and supervision, as well as market discipline exercised by large depositors and creditors can keep bank owners and managers in check.

While there is little evidence that empowering intervention powers of bank supervisors enhances bank stability, private sector monitoring can have both direct and indirect positive effects on financial intermediation (Caprio and Honohan, 2004). Monitoring and disciplining by market participants such as large depositors and other creditors has the advantage of many eyes instead of just one as in the case of supervisors; further, many eyes might be less subject to political pressure than the supervisory authority. In addition, market signals in the form of deposit interest rates, yields on subordinated debt or equity prices of publicly listed banks moving in response to risk taking and performance of banks provide additional information to bank supervisors to act on. This signaling mechanism can only work, of course, if coupled with effective official intervention into institutions that the market has identified as weak. The

interaction of market and supervisory monitoring and disciplining can thus be powerful in reigning in bankers' incentives to take aggressive risks.

Political independence and accountability and protection of supervisors from frivolous law suits by financial institutions and others are important to prevent political and regulatory capture. Most importantly, however, is the lack of a government guarantee for shareholders or large depositors or creditors as this undermines the incentives to monitor banks and consequently the market prices reflecting banks' risk taking.

While the finding that explicit deposit insurance is associated with more rather than less bank fragility does not necessarily imply an abandonment of the idea of deposit insurance in countries where it already exists, careful design of deposit insurance is critical. Limited coverage and exclusion of certain groups can create a class of creditors – such as holders of subordinated debt, other financial institutions, insiders or large corporations – that have the means to monitor banks and exercise market discipline. Aligning the interests and incentives of banks and the managers and owners of the deposit insurance scheme by funding and administering the scheme privately, with limited if any government back-up funding, can further reduce moral hazard risks. Finally, linking the deposit insurance scheme effectively to the bank failure resolution system can be critical in reducing the moral hazard risk induced by explicit deposit insurance and in fostering market and supervisory discipline (Beck and Laeven, 2006). The main objective of an incentive-compatible bank failure resolution system is the protection of financial intermediation, i.e. small depositors, borrower-lender relationships and the payment system, rather than to protect an individual institution and its shareholders.

5.4. Government's role in Bangladesh's financial system – a status quo analysis

What is the role of Bangladesh's government in the financial system and how does it compare to the three approaches laid out above? The government has started an important reform project, which eventually will move the financial system away from the market-failure approach; however, it is not clear that this reform program involves redefining the government's role towards that of enabling and developing markets rather than substituting them.[25]

Starting with the FSRP in the early 1990s, the government has abolished almost all interest rate controls with the exception of loans supporting export activities. Rather, banks have to report reference lending interest rates for different sectors and individual lending rates can only move in a band of 1.5 percentage points above and below this reference rate. While this still imposes certain restrictions on financial institutions in adequately pricing idiosyncratic risks, banks can get around this requirement by redefining the sector of the borrower and/or imposing additional non-interest charges. While the setting of reference rates can certainly improve the transparence of banks' pricing policies – if made public - the restrictions on actual lending rates to a band rather decreases transparency by forcing banks to non-interest charges and can effectively ration borrowers in specific sectors. There are no credit directives for privately-owned banks, while government-owned banks are still expected to lend to priority sectors.

Although it privatized two of the six NCBs in the 1980s and allowed private banking, Bangladesh started out the 21st century with a banking system dominated by government-owned banks and several weak privately-owned banks. The dominance by NCBs has fostered a culture of non-payment, has provided rents to more efficient privately owned banks and has distorted resource allocation. With assistance from multilateral donors, Bangladesh has recently embarked on a wide-ranging divestiture program for the NCBs. Loan growth restrictions have

[25] The reform agenda of the past years is summarized in Ahmed (2005).

been imposed on the four NCBs and three of the four institutions are scheduled to be partially privatized during the coming years to a majority private shareholder; in the fourth institution, only a minority share is supposed to be sold, while the government will maintain a minority share in the other three institutions. The restructuring and divestiture process, however, has been slow and plagued by political interference, resistance from labor unions, and judicial roadblocks.

While Bangladesh Bank is formally independent, this is not reflected in reality. Rather, anecdotal evidence suggests that the licensing process is a political one, with Bangladesh Bank following "recommendations" of the political class to allow new banks into the system. This has also caused a number of weak PCBs, plagued by insider lending and other owner abuse.

The political capture of the regulatory entity also prevents proper resolution of failing banks. While there is an explicit deposit insurance scheme, it has not been used – rather, Bangladesh Bank has extended an implicit guarantee to all banks. Over the past years, no domestic bank has been allowed to fail;[26] weak banks are being referred to the Problem Bank Monitoring Department within Bangladesh Bank where they are subject to special supervisory oversight and certain regulatory restrictions and enjoy regulatory forbearance.[27]

The dominance of government-owned banks and politically connected private banks and the reluctance to resolve the weak banks among them result in inefficiencies in the financial system. As weak banks have to cover loan loss provisions, this drives up the spread between lending and deposit rates and allows other healthy banks to enjoy rents in the form of higher profits. The high degree of politicization of financial intermediation might explain the high share of firms that report corruption in lending as major obstacle as above.

[26] The only bank to be closed was BCCI, forced by circumstances external to Bangladeshi influence; the Bank was restructured and reopened as Eastern Bank.
[27] Pubali Bank spent ten and National Bank three years under the intensified supervision of the Problem Bank Monitoring Department.

Given the politicized licensing process and the implicit guarantee extended by Bangladesh Bank even for privately-owned banks, bank owners face large and unchecked incentives to take aggressive credit risk. There are no incentives for depositors or other creditors to exercise any market discipline given the implicit guarantee. This can explain fragility in the banking system even beyond government-owned banks in the 1990s. Bangladesh Bank has responded to this fragility in recent years by following international "best-practice" recommendations and by strengthening bank regulation and supervision. The capital adequacy ratio was raised from 8% to 9% of risk-weighted assets and the minimum capital requirement was raised from 400 million (6 million USD) to 1 billion BDT (15 million USD). Loan classification, rescheduling, and provisioning rules were tightened and single exposure and large loan limits introduced. Risk management guidelines were issued. Measures to improve corporate governance were introduced: the number of board members a financial institution can have was restricted to a maximum of 13; the time a director can serve was restricted to six years; shareholding by one shareholder was limited to 10% of capital and only one member from a shareholding family can sit on the board; banks had to establish audit committees; limitations on divided payout were imposed and even limitations on expenditures for automobiles and travel expenses for executives. In order to expand outreach, banks were required to open three banks in rural areas for every branch opened in an urban area. Bangladesh Bank has gone even deeper into prescribing banks' operational functioning by issuing job and task descriptions for board members and CEO and the appointment of a CEO is subject to Bangladesh Bank approval. Bangladesh Bank has forced the resignation of several CEOs and board directors over the last few years.

While the introduction of these measures has to be understood in the context of replacing market discipline with supervisory discipline, given that the former is absent in light of an implicit guarantee, this heavy-handed regulation is partly ineffective and comes at a high cost. Banks can get around the branching requirement by opening new branches just outside the urban areas – given that the urban areas in Bangladesh are still growing, soon these branches will be inside the urban areas – against the spirit of the regulation. Nevertheless, this regulation causes sub-optimal allocation of bank branches. Regulations such as for branch opening or prescribing bonuses and benefits for board members and executives cause additional transaction costs and cause inefficiencies in banks' operations. Vetting the appointments of new CEOs by Bangladesh Banks seems rather in the old tradition of operating a financial system than regulating it. Finally, similar governance measures were introduced later and are still not being enforced for the banks that need them most – the NCBs.

Another indication that bank supervision in Bangladesh is heavy-handed compared to other countries is the number of professional bank supervisor per institution, which stood at eight in 1997, substantially above the average of 2.6 for a sample of over 100 countries. [28]

Figure 17 illustrates the interaction of government guarantee and supervisory approach. On the horizontal axis is the degree of government guarantee and on the vertical axis the degree of supervisory intervention. Given that the Bangladeshi banking system enjoys an implicit guarantee for depositors and owners, there are no incentives for monitoring and discipline by market participants. The absence of both market and supervisory discipline (south east corner) resulted in easy abuse by banks and high risk of fragility in the past. Bangladesh Bank has thus opted to introduce the above discussed approach of supervisory intervention (north east corner).

[28] Source is Barth, Caprio and Levine (2006). Unfortunately, there are no more recent data available. Of course, this high number of bank supervisors also reflects overstaffing in the Bangladesh Bank, and there might certainly be a bi-directional causality between the size of the supervision department and supervisory interference into banks.

Given the continuing explicit and implicit guarantee, the politicization of licensing and the lack of exit of weak banks, this approach can avoid any "open" failures, but comes at huge efficiency losses – high spreads and sub-optimal allocation of resources across borrowers - and involves high and increasing contingent losses for the government.

However, Bangladesh Bank has also introduced important measures towards market-based supervision. Starting some years ago, Bangladesh Bank required banks to go public at the stock exchange; as a goal, banks should list 50% of their share on the stock exchange. Disclosure requirements are higher for financial institutions than for non-financial corporations: banks and NBFI have to publish their annual financial statements in newspapers and ensure availability for public view in bank branches. Similarly, auditing requirements for banks are more stringent than for non-financial corporations; Bangladesh Bank maintains a separate list of approved auditors for banks. So, the first fundaments for a more market-based supervision have been laid. Given the implicit guarantee of Bangladesh Bank for owners, creditors and depositors of all banks, however, these important actions cannot serve their function in enhancing market discipline.

6. A financial sector reform agenda for Bangladesh

In recent years, the Bangladesh government has embarked on a wide-ranging financial sector reform program. While some of the reform measures are consistent with the market-enabling approach, others are not. Overall, however, a more general paradigm shift is needed, as we will lay out in the following.

The move to a privately-owned financial system is an important one. But as discussed in section 5.2., international experience advises caution (but not delay) in the privatization process. First, such a process should be ideally undertaken by an entity that is independent from the

political sphere and will undertake the choice of strategic investors purely on terms of merit not on socio-political terms. Second, the privatization process should be used to minimize the share of government ownership and if possible reduce it to zero. The future private owners might not object or might even welcome continuous minority government ownership; however, this might send the wrong signal. It might suggest to the market, that the government is not only interested in continuing to influence decisions in the financial sector that are supposed to be taken by private actors, but - even worse – that it stands ready to bail out the private buyers of the NCBs if need arises. While the first concern can be addressed by excluding government representatives from the Board of the NCBs, thus reducing government to a passive minority owner, the second concern can only be addressed by government's actions and signals play an important role here. Third, the bank privatization process should be coupled with a resolution of the SOE bad debt problem. The reliance of SOEs on lending from the NCBs will pose a problem for these banks even once they are privatized and consequently poses a problem for the government as owner of the SOEs and regulator of the privatized banks. Finally, the government should ensure a level playing field between the privatized NCBs and other providers of financial services.[29]

As important as the transformation of government-owned banks into privately-owned market players are the de-politicization of the entry into the market and the reform of the exit process. The licensing process of the financial system has to be put on objective, non-political basis. While technical issues might impede proper bank failure resolution, such as the lack of a merge and acquisition provision in the Companies Act, it is especially the political willingness to resolve failing banks with market-based solutions that counts. Resolving a weak bank through liquidation or a purchase and assumption operation with the use of the explicit deposit insurance

[29] This refers for example to Sonali Bank that has the function of a government agent in many localities, which it effectively gives it a dominant financial market position in these areas.

scheme would send an important signal to the market that Bangladesh Bank is moving away from an implicit guarantee for all financial institutions to a system where it cares about financial intermediation not about individual institutions. Note that this does not imply embracing the idea of deposit insurance; rather it encourages the use of an existing but unused mechanism to move to a market-based bank failure resolution.

These different reform steps will allow Bangladesh Bank to move to a more market-based regulation and supervision system. This can be illustrated in Figure 17 where divestiture from NCBs, de-politicization of licensing and a market-based bank failure resolution system would move the system away from the complete explicit and implicit guarantee to a system with a limited explicit depositor guarantee (north west corner). In the medium to long term, this would then allow Bangladesh to move towards the south west corner of the graph, a financial system with limited explicit guarantee and market-based supervision. Note that this would not mean a weaker Bangladesh Bank, but rather a regulator with the necessary powers and the necessary independence to foster market discipline and enhance a market-based financial system.

While the reform agenda laid out above implies a rather radical change in the approach to the relationship between supervisors and supervised and between government and private sector, the reform agenda also implies some very concrete *initial* steps that should accompany the currently ongoing divestiture process of the NCBs. First, given the large number of banks in the market a temporary and limited moratorium on new bank licenses should be imposed. Second, during this moratorium, all banks should be subjected to special audits to assess their long-term viability. Third, banks that are found non-viable should be resolved, preferably through market-based solutions such as merger and acquisition or purchase and assumption operations. Fourth, the legal and regulatory framework for bank failure resolution should be reviewed and possibly

reformed. Finally, a medium- to long-term financial sector strategy should be developed that lays out further reforms in a clear and transparent manner.

While this paper and the policy discussion and recommendations up to now have focused on the banking system – justified as it is the major segment in Bangladesh's financial system - the analysis carries over to other parts of the financial system and offers critical recommendations in other areas. While a pioneer in the microfinance movement, Bangladesh has only recently started to address the issue of regulating and supervising micro-finance institutions (MFIs). The authorities are currently in the process of drafting a legal framework to subject to mostly unregulated sector to official oversight by a new entity, i.e. outside the Bangladesh Bank. While we can and will not go into any detail on international experience with microfinance regulation and supervision (Christen, Lyman and Rosenberg, 2003) or the Bangladeshi circumstances, the analysis of government's role in the banking systems offers conclusions also for this process. First, regulation and supervision should to the extent possible rely on market participants, which would exclude the introduction of deposit insurance. The new regulatory entity should be independent but accountable. It should be seen as facilitator not operator of the microfinance sector. Prudential regulation should be limited to deposit-taking institutions and should be clearly separated from non-prudential regulation. Finally, a level playing field should be generated, which implies that financial institutions should be regulated and supervised according to the products they offer, not according to the legal form they take.

Similar supervisory problems as in the banking system are reported for the stock market (ADB, 2004; Sobhan and Werner, 2003). While the SEC tries to enhance governance by forcing companies to hold shareholder meetings and publish audited financial statements within certain time frames, it also interferes directly into company decisions by prescribing dividend levels,

under the assumption that low dividends even if justified by poor performance must be due to fraudulent management actions. The authority to override the Company Act or Articles of Association of any corporation is even given by law (Sobhan and Werner, 2003). As the Bangladesh Bank, SEC can interfere in the appointment of board members and CEOs. While this is again justified with the underdevelopment of a shareholder culture in Bangladesh, cross-country comparisons show little evidence for a positive effect of public enforcement on stock market development, but a positive effect of private monitoring and disciplining; laws that mandate disclosure and facilitate private enforcement through liability rules foster stock market development (La Porta, Lopez-de-Silanes and Shleifer, 2006).

Another example is the lack of a "limited liability culture". While Bangladeshi law recognizes limited liability companies, directors and owners that hold more than a certain percentage of equity are made liable for any losses beyond paid-in capital with their personal assets. Similarly, the reliance of banks on personal guarantees of company directors due to the deficiencies in the collateral regime undermines the limited liability culture. It is a huge disincentive to serve as independent director on a board's company and a barrier to entrepreneurship. While this has to be understood in the context of a deficient contractual and informational framework with weak accounting standards and little protection for minority shareholders and creditors, it is clearly second-best and provides disincentives for innovation and entrepreneurship.

7. Conclusions

The financial sector is critical for sustained economic development and poverty reduction. This paper has argued that beyond macroeconomic stability and an effective and

reliable contractual and informational framework, the role of government has to be redefined to make Bangladesh's financial system more efficient and growth enhancing. Specifically, the government should move from the role of an operator and arbiter in the financial system to the role of enabling and creating markets.

It is often argued that the financial sector suffers from the general governance problems in the economy and the society at large. However, it could be as well argued that financial sector reform should be in the center of governance reform, since it is here that the money and thus the temptation is.[30] A proper and transparent divestiture process of the NCBs and the de-politicization of financial sector regulation and supervision can send an important signal to the rest of the economy and society and be an important catalyst for governance reforms in other areas. As mentioned above, it can be a catalyst for the redefinition of government's role in the real economy, as the NCB divestiture process has to be linked to the SOE resolution. Banks that are effective in monitoring and disciplining their borrowers can serve as catalyst for corporate governance reform in the non-financial sector (Sobhan and Werner, 2003). An autonomous and accountable Bangladesh Bank can be an example for institutional reform of other government entities in the country. Finally, moving from a politicized and interventionist supervision process to a market-based process can help move the economy from a purely relationship-based economy to an arms-length economy. While Bangladesh has achieved relatively high economic growth over the past years with a distorted financial system and in spite of its governance problems, cross-country experience has shown the importance of financial and institutional development to *sustain* long-term economic growth. Now would be therefore the right moment to address this agenda.

[30] As the famous bank robber Willie Sutton is claimed to have said: "because that's where the money is", when asked why he robbed banks.

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Appendix: Structural Vector Autoregression Models

In order to investigate the long-run relationship among financial development and investment and per capita income a system of equations based on the long-run SVARs model is specified where a set of economically meaningful identification restrictions on the data is required. Consider the following production function

$$Y=f(K,AL) \quad (1)$$

Here, Y = Real output, K = Capital, L = Labor and A = Technology. Dividing equation (1) by effective labor (AL), we get the following intensive form production function

$$y=f(k)$$

We know that change in capital is nothing but investment where per capita income is an increasing function of investment or capital formation. Therefore,

$$\dot{k} = I = sy \rightarrow y = f(I) \quad (2)$$

Where '*I*' and '*s*' are investment and rate of saving respectively.

Assuming that investment (*I*) is an increasing function financial development (*F*), equation (2) can be written as

$$\dot{k} = I = f(F) \quad (3)$$

Inserting equation (3) into (2), we get

$$y = f(I,F) \quad (4)$$

The above functional relationship among per capita income, investment and financial development can be expressed as *F* (financial development) ➔ *I* (investment) ➔ *y* (income per capita) meaning to say that financial development generates investment and investment generates higher per capita income. This chain of causality can be expressed as

$$I = f(F) \quad (5)$$

$$y = f(I, F) \quad (6)$$

Based on the functional relationship specified in equations (5) and (6) and incorporating a policy variable, the short-term real lending rate (r*lr*), we can specify the following long-run functional relationship among lending rate, financial development, investment and GDP per capita.

$$e_t^{rlr} = \varepsilon_{1t} \quad (7)$$

$$e_t^F = A_{21} e_t^{rlr} + \varepsilon_{2t} \quad (8)$$

$$e_t^I = A_{31} e_t^{rlr} + A_{32} e_t^F + \varepsilon_{3t} \quad (9)$$

$$e_t^y = A_{41} e_t^{rlr} + A_{42} e_t^F + A_{43} e_t^I + \varepsilon_{4t} \quad (10)$$

Here e_t^i is the estimated residual of i^{th} equation from standard VAR model, A_{ij} is the long-run response of i^{th} variables to j^{th} structural shocks and ε_{it} is the structural shocks from the i^{th} variable in the system. The restrictions stated in equations (7)-(10) have some interesting implications regarding financial development-economic growth relationship in that it asserts financial development has long-run effect on investment and per capita income. Income per capita, on the other hand, has no long-run effect on financial development. Blanchard-Quah's (1989) technique of SVARs is employed to estimate the long-run response matrix.

Table 1. GDP per Capita Growth and Private Credit

The regression equation estimated is: GDP per capita growth = α + β_1 Initial income + β_2 Population growth +β_3 Education+ β_4Govt. consumption + β_5Inflation + β_6Black market premium + β_7Trade + β_8 Private credit. GDP per capita growth is the real growth rate of GDP over the period 1990-2000. Initial GDP per capita is the log value measured in 1990. Population growth is average annual log difference in total population. Education is average years of schooling in 1980.. Government consumption is the general govt. final expenditure as a % of GDP. Inflation is measured by the annual log difference of the CPI. Black market premium is the overvaluation of the official relative to the black market exchange rate in percentages. Trade is share of exports and imports in GDP. Private credit is claims of financial institutions on the private sector, as a share of GDP. All data are averaged over 1980 to 2003 unless otherwise noted.

Log(Initial GDP per Capital)	-1.265***
	[4.19]
Years of Schooling	0.183**
	[2.37]
Log(Government Consumption)	-0.434
	[0.89]
Log(Trade)	0.25
	[0.93]
Log(Black Markey Premium)	-0.032
	[0.09]
Log(Inflation)	0.02
	[0.03]
Log(Private Credit)	1.014***
	[4.56]
Population Growth	-0.753***
	[3.91]
Constant	13.748***
	[4.55]
Observations	100
R-squared	0.51

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 2. Financial Development, Investment and Income in Bangladesh over Time

Period	Real lending rate	Private Credit to GDP	Total Deposits to GDP	M2 to GDP	Investment-GDP ratio	Income per capita in USD
1976-1980	11.09	6.59	14.86	19.03	10.44	160.0
1981-1985	13.68	13.67	20.23	24.54	10.51	192.0
1986-1990	14.71	19.08	24.75	28.67	13.87	242.0
1991-1995	13.90	16.58	23.07	26.68	17.93	283.0
1996-2000	13.83	23.17	26.70	31.01	21.51	353.0
2001-2005	12.33	28.83	35.08	40.02	22.63	395.0

Sources: On-line version of International Financial Statistics (IFS), IMF, World Development Indicator CD ROM 2003, World Bank. Annual Report and Economic Trends (various issues), Bangladesh Bank and authors' estimates.

Table 3 Estimates for the Long-run Responses to Structural Shocks

This table shows the long-run responses from a one standard deviation structural shock to the real lending rate, estimated from a structural vector autoregression model rlr denotes the real lending rate, cr_y Private Credit to GDP, i_y the investment-GDP ratio and y_pcap income per capita in current USD. Z-values are presented in parentheses. *** denotes significance at the 1% level.

I. Full sample period 1976-2005

$$e_t^{cr\_y} = \underset{(5.42)}{0.93***} e_t^{rlr}$$

$$e_t^{i\_y} = \underset{(6.98)}{0.95***} e_t^{rlr} + \underset{(3.44)}{0.15***} e_t^{cr\_y}$$

$$e_t^{y\_pcap} = \underset{(6.60)}{0.84***} e_t^{rlr} + \underset{(4.29)}{0.22***} e_t^{cr\_y} + \underset{(6.89)}{0.22***} e_t^{i\_y}$$

II. Pre-FSRP period 1976-1990

$$e_t^{cr\_y} = \underset{(3.73)}{0.63***} e_t^{rlr}$$

$$e_t^{i\_y} = \underset{(4.53)}{0.23***} e_t^{rlr} - \underset{(-1.15)}{0.03} e_t^{cr\_y}$$

$$e_t^{y\_pcap} = \underset{(4.11)}{0.26***} e_t^{rlr} - \underset{(-0.89)}{0.03} e_t^{cr\_y} + \underset{(3.50)}{0.11***} e_t^{i\_y}$$

III. Post-FSRP period 1991-2005

$$e_t^{cr\_y} = \underset{(-4.52)}{-0.39***} e_t^{rlr}$$

$$e_t^{i\_y} = \underset{(-3.64)}{-0.14***} e_t^{rlr} + \underset{(4.48)}{0.10***} e_t^{cr\_y}$$

$$e_t^{y\_pcap} = \underset{(-5.08)}{-0.35***} e_t^{rlr} + \underset{(5.42)}{0.10***} e_t^{cr\_y} + \underset{(3.74)}{0.01***} e_t^{i\_y}$$

Table 4. Banking and Non-Banking Indicators for Bangladesh in International Comparison

Loan-Deposit Ratio is the ratio of private credit by deposit money banks to demand, time and saving deposits in deposit money banks; Liquid Liabilities / GDP is the ratio of liquid liabilities to GDP; Private Credit / GDP is the ratio of private credit by deposit money banks and other financial institutions to GDP; Bank Deposits / GDP is the ratio of demand, time and saving deposits in deposit money banks to GDP; Overhead Costs are the value of a banks' overhead costs as a share of its total assets; Net Interest Margin is the banks' net interest revenue as a share of its interest-bearing (total earning) assets; Stock Market Capitalization / GDP is the ratio of the value of listed shares to GDP; Stock Market Total Value Traded / GDP is the ratio of total shares traded on the stock market exchange to GDP; Stock Market Turnover Ratio is the ratio of total shares traded to average real market capitalization; Life Insurance Premium Volume / GDP is the ratio of life insurance premium volume to GDP; Non-Life Insurance Premium Volume / GDP is the ratio of non-life insurance premium volume to GDP. All data are for 2004.

	Panel A – Banking Indicators						**Panel B – Non-Banking Indicators**				
	Loan-Deposit Ratio	Liquid Liabilities / GDP	Private Credit / GDP	Bank Deposits / GDP	Overhead Costs	Net Interest Margin	Stock Market Capitalization / GDP	Stock Market Total Value Traded / GDP	Stock Market Turnover Ratio	Life Insurance Premium Volume / GDP	Non-Life Insurance Premium Volume / GDP
Bangladesh	0.801	0.389	0.274	0.342	0.026	0.026	0.043	0.016	0.365	0.004	0.002
Indonesia	0.540	0.433	0.210	0.389	0.031	0.048	0.248	0.107	0.430	0.006	0.007
India	0.641	0.616	0.328	0.511	0.022	0.032	0.482	0.548	1.137	0.024	0.006
Nepal				0.367	0.021	0.033		0.004			
Pakistan	0.748	0.469	0.257	0.344	0.021	0.028	0.235	0.769	3.268	0.002	0.004
Low Income	0.656	0.294	0.147	0.220	0.058	0.077	0.180	0.096	0.720	0.009	0.007
South Asia	0.677	0.486	0.269	0.402	0.024	0.031	0.229	0.273	1.239	0.009	0.005
East Asia & Pacific	0.712	0.544	0.402	0.456	0.026	0.041	0.510	0.223	0.311	0.017	0.011

Table 5. Inflation and Budget Balance Trends for Bangladesh, 2000-2004

Overall budget balance (including capital grants) is current and capital revenue excluding capital grants, less total expenditure and lending minus repayments.

	Bangladesh					Low Income	South Asia	East Asia & Pacific
	2000	2001	2002	2003	2004	2000-2004 Annual Avg.		
Inflation, CPI (%)	2.21	2.01	3.33	5.67	3.16	12.39	3.91	6.67
Budget Balance / GDP (%)*	-6.47	-5.01	-4.64	-3.38	-3.19	-3.86	-6.13	-3.93

Table 6: Bank Supervision and Corruption in Lending

The underlying model is: Bank Corruption = β_1 Government + β_2 Foreign + β_3 Exporter + β_4Manufacturing + β_5 Services + β_6 Sales +β_7 Number of Competitors +β_8 Inflation + β_9 Growth + β_{10} Priv +β_{11} General Financing Obstacle +β_{12} Supervision + ε. Bank Corruption is the response to the question "Is the corruption of bank officials an obstacle for the operation and growth of your business?" General Financing Obstacle is the response to the question "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Priv is claims on the private sector by deposit money banks as share of GDP. Supervisory Power is a principal components indicator of the power of supervisory agency to discipline and monitor banks. Private Monitoring is a principal components indicator of the degree to which regulations force banks to disclose accurate, transparent information to the public and whether regulations facilitate and encourage private sector monitoring of banks. The regressions are run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses. *,**,*** indicate significance levels of 10, 5, and 1 percent, respectively. Source: Beck, Demirguc-Kunt and Levine (2006a).

Supervisory Power	0.155
	(0.006)***
Private Monitoring	-0.347
	(0.004)***
General Financing Obstacle	0.298
	(0.000)***
Observations	2510
Pseudo R square	0.09

Figure 1. GDP per Capita Growth and Private Credit

This graph illustrates a regression of real GDP per capita growth on log of initial GDP per capita, government consumption as share of GDP, trade as share of GDP, black market premium, average years of schooling, inflation, population growth and Private Credit. Specifically, this figure represents the two-dimensional representation of the regression plane in GDP per capita growth – Private Credit space. To obtain this figure, we regress GDP per capita growth on all explanatory variables except Private Credit, collect the residuals, and call them (GDP per Capita Growth | X). Next, we regress Private Credit against all other explanatory variables, collect the residuals, and call them e(Private Credit | X). Then, we plot e(GDP per Capita Growth | X) against e(Private Credit | X). All data for the regressions are averaged over the period 1980-2003. Results for the regression are reported in Table 1. Private Credit is the claims of financial institutions on the private non-financial sector to GDP.

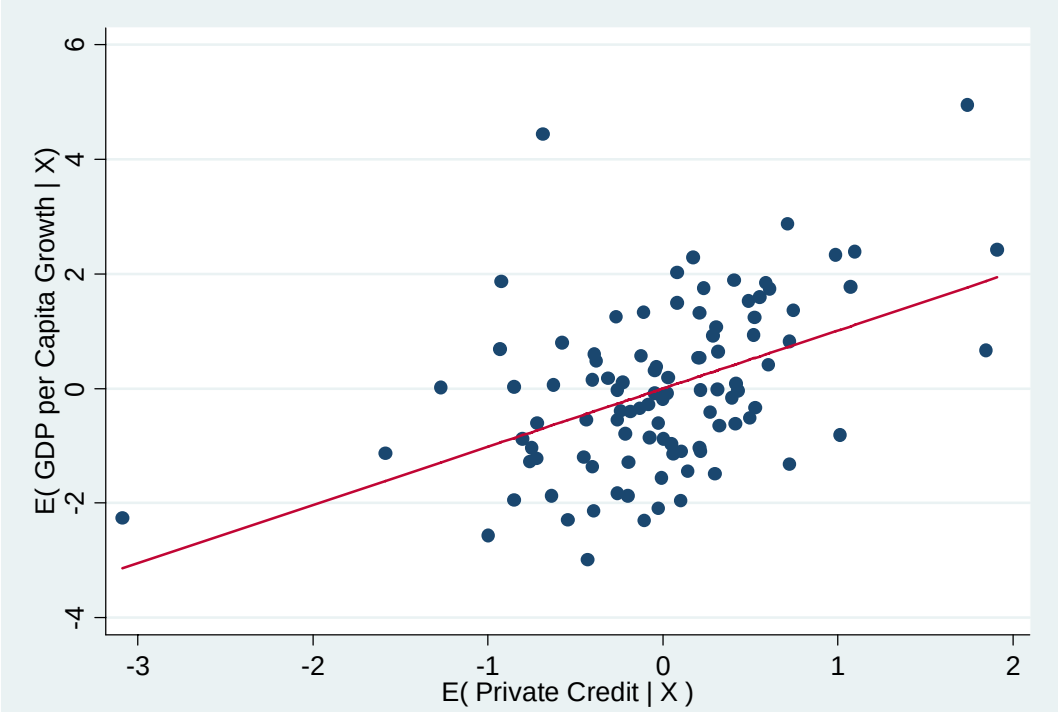

Figure 2: Poverty Alleviation and Private Credit

This graph illustrates a regression of Growth of Headcount against log of initial Headcount, GDP per capita Growth and Private Credit. Specifically, this figure represents the two-dimensional representation of the regression plane in Growth of Headcount – Private Credit space. To obtain this figure, we regress Growth of Headcount on log of initial Headcount and GDP per capita Growth, collect the residuals, and call them (Growth of Headcount | X). Next, we regress Private Credit against log of initial Headcount and GDP per capita Growth, collect the residuals, and call them e(Private Credit | X). Then, we plot e(Growth of Headcount | X) against e(Private Credit | X). Source: Beck, Demirguc-Kunt and Levine (2004).

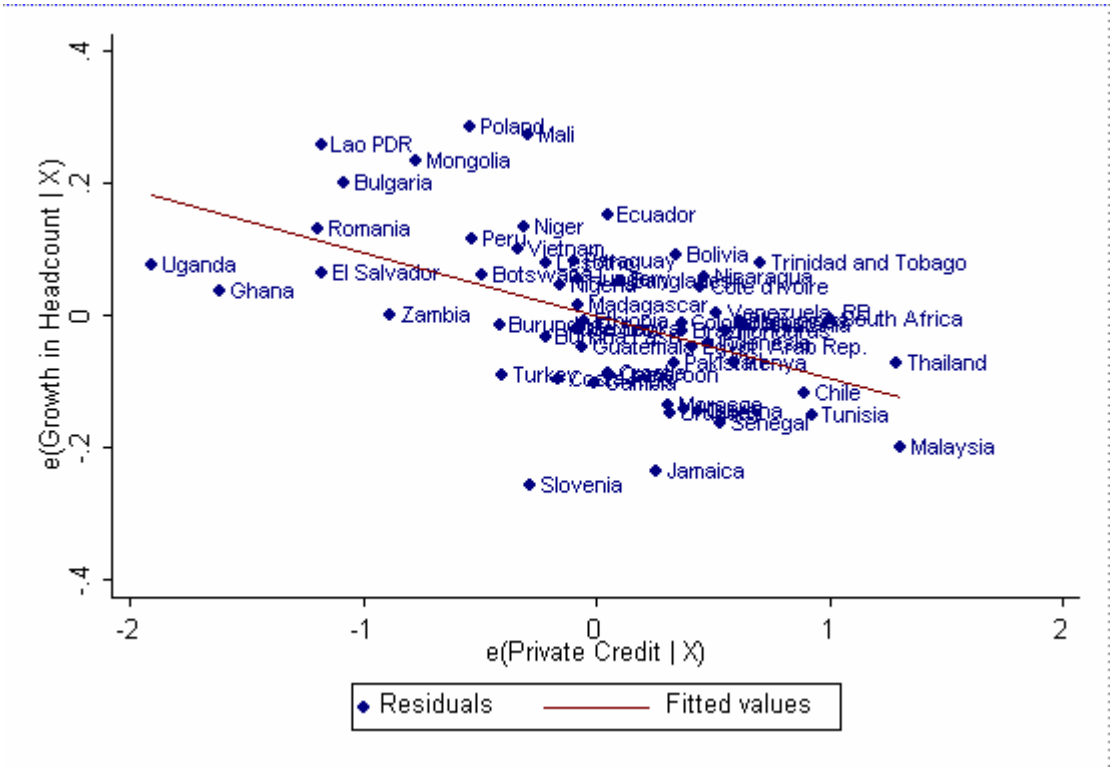

Figure 3. Financial Development, Investment and Income in Bangladesh over Time

cr_y Private Credit to GDP, dep_y is total deposits to GDP, m2_y is M2 to GDP, i_y the investment-GDP ratio and y_pcap income per capita in current USD.

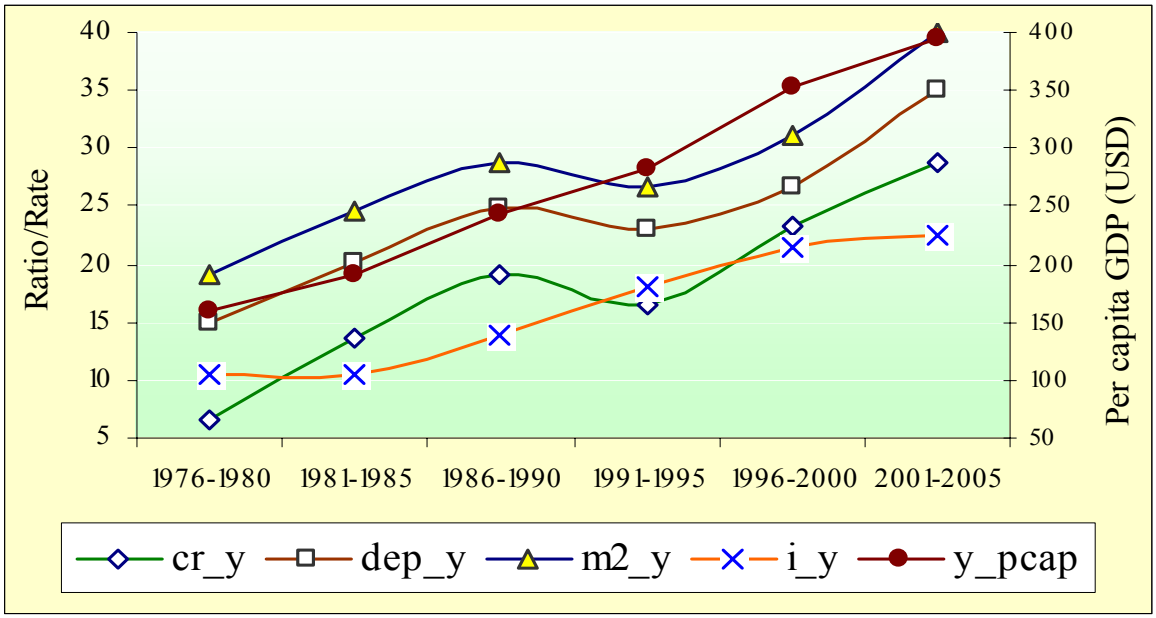

Figure 4. Branch Penetration Across Countries

Source: Beck, Demirguc-Kunt and Martinez Peria (2005)

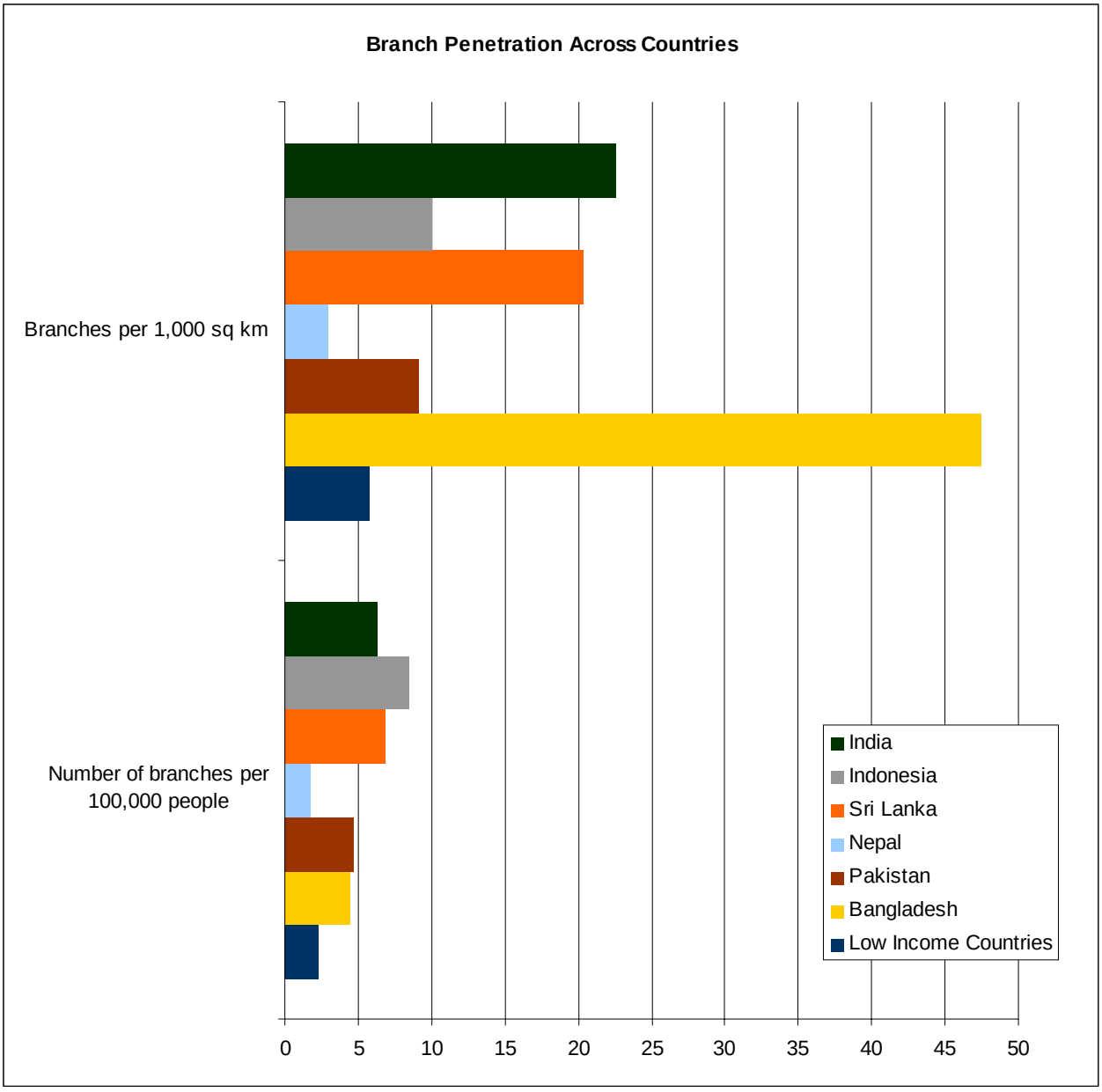

Figure 5. ATM Penetration Across Countries

Source: Beck, Demirguc-Kunt and Martinez Peria (2005)

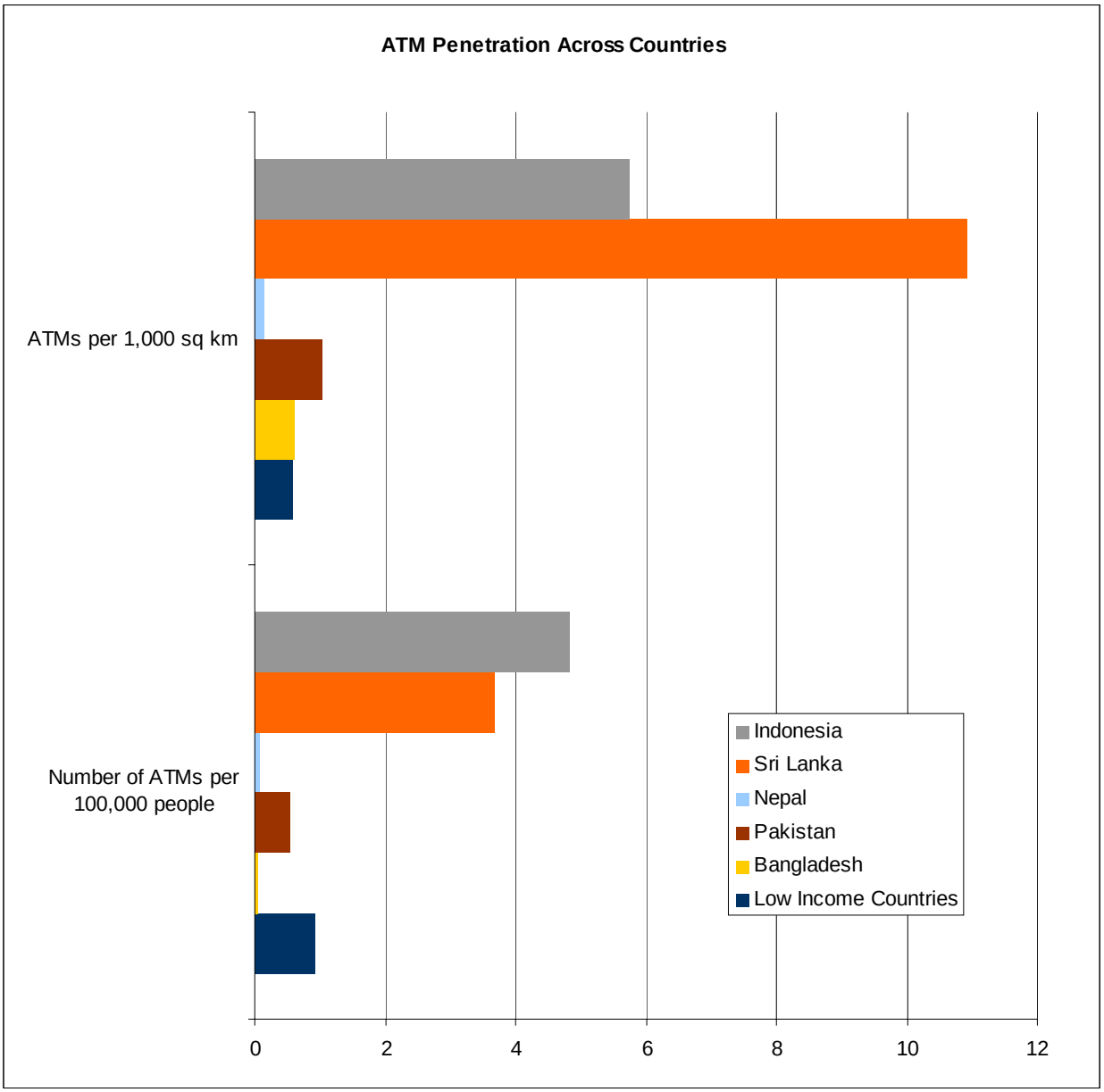

Figure 6. Loans/Deposits per Capita Across Countries

Source: Beck, Demirguc-Kunt and Martinez Peria (2005)

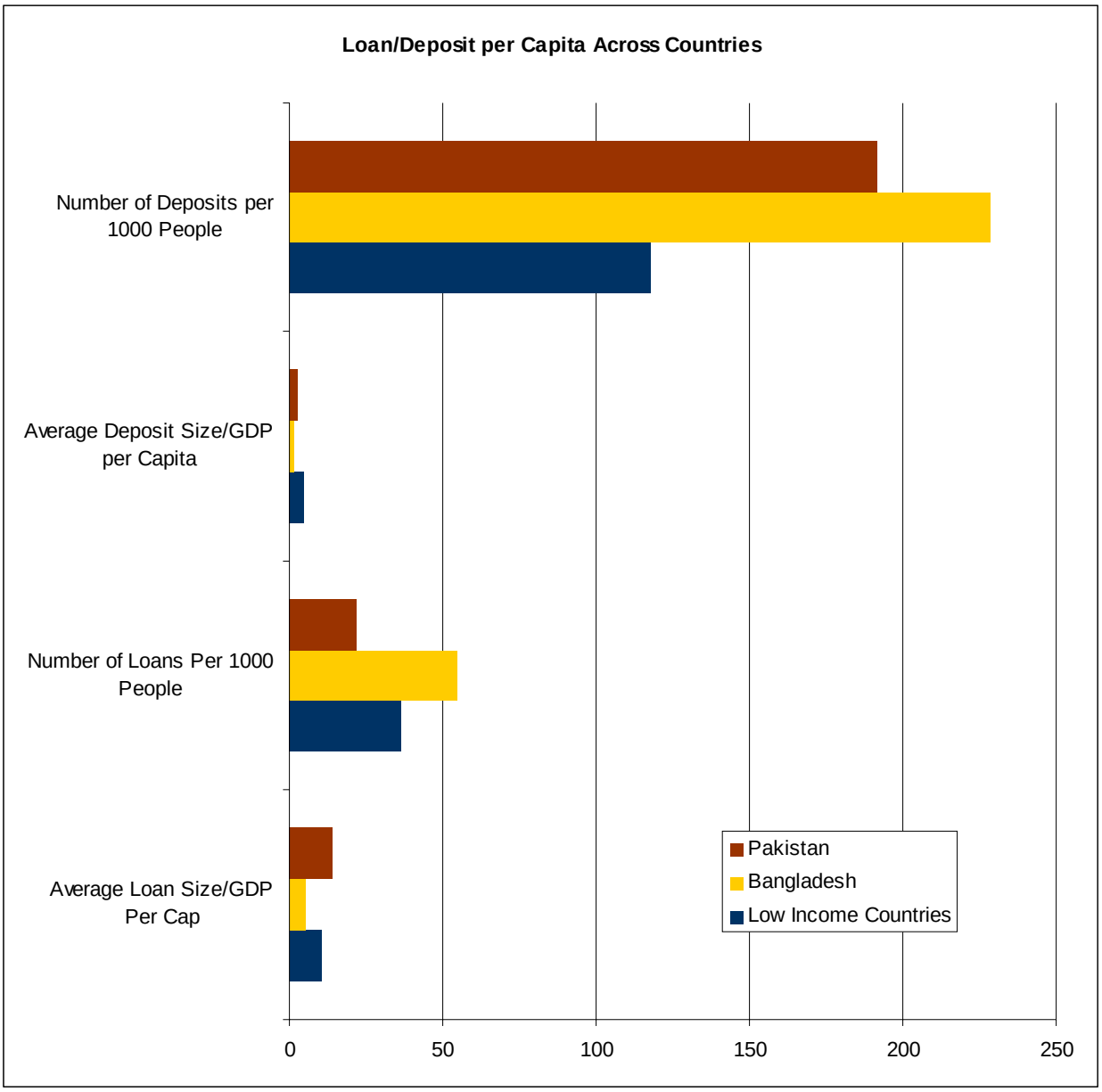

Figure 7. Loan/Deposit-to-Income Ratio Across Countries

Source: Beck, Demirguc-Kunt and Martinez Peria (2005)

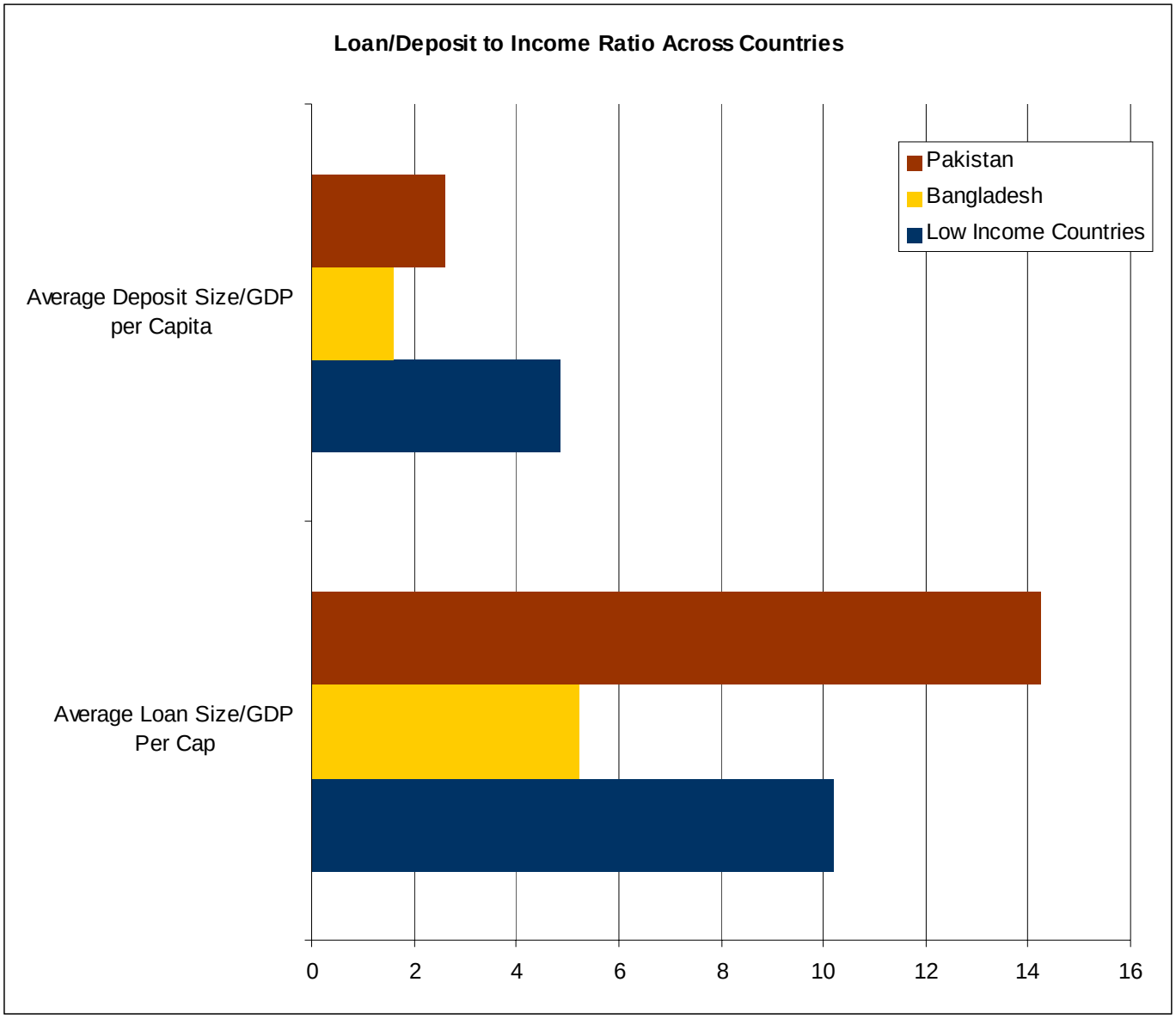

Figure 8. Sources of Financing: Share of Working Capital

Source: Investment Climate Assessments

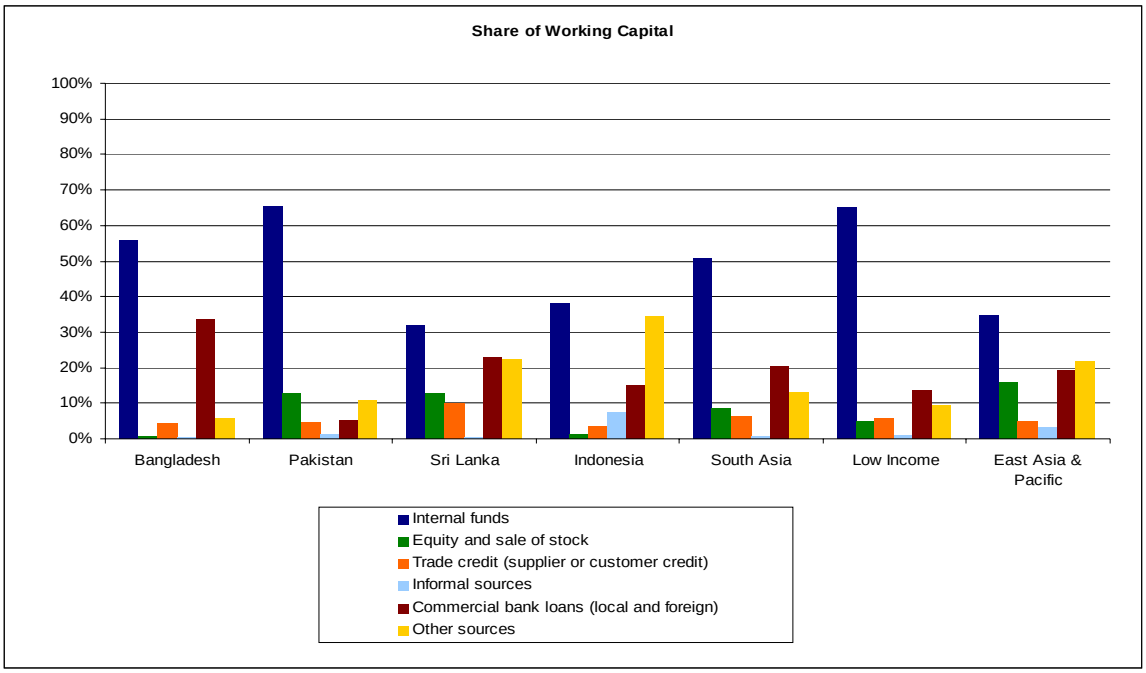

Figure 9. Sources of Financing: Share of New Investments

Source: Investment Climate Assessments

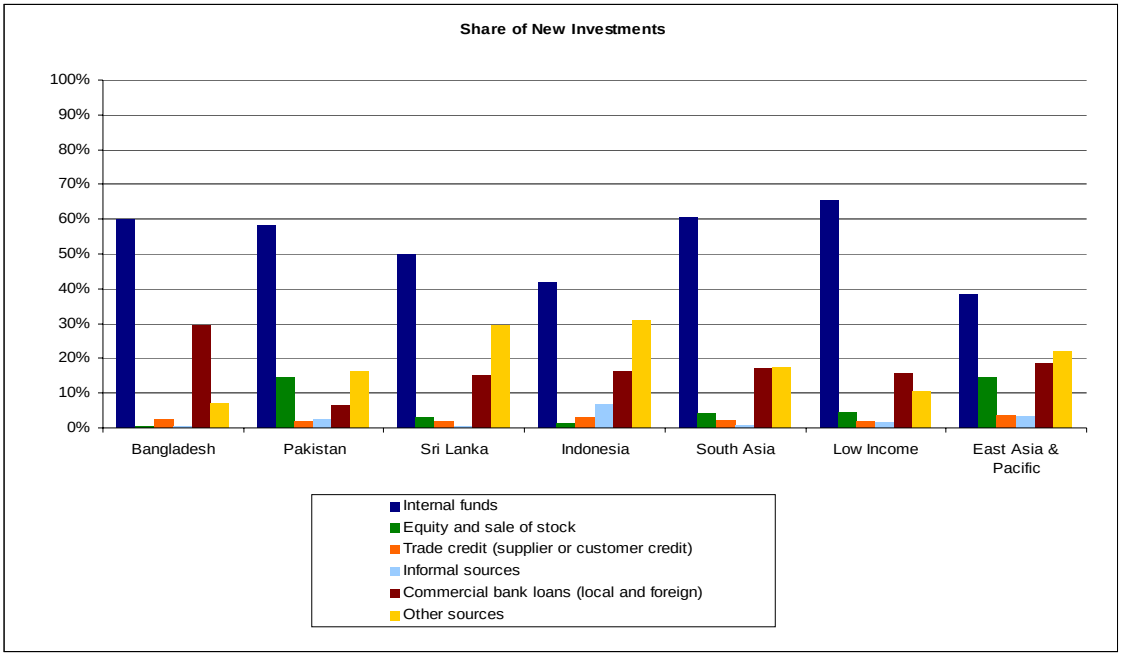

Figure 10. Financing Obstacles – Access to and Cost of Finance

Source: Investment Climate Assessments

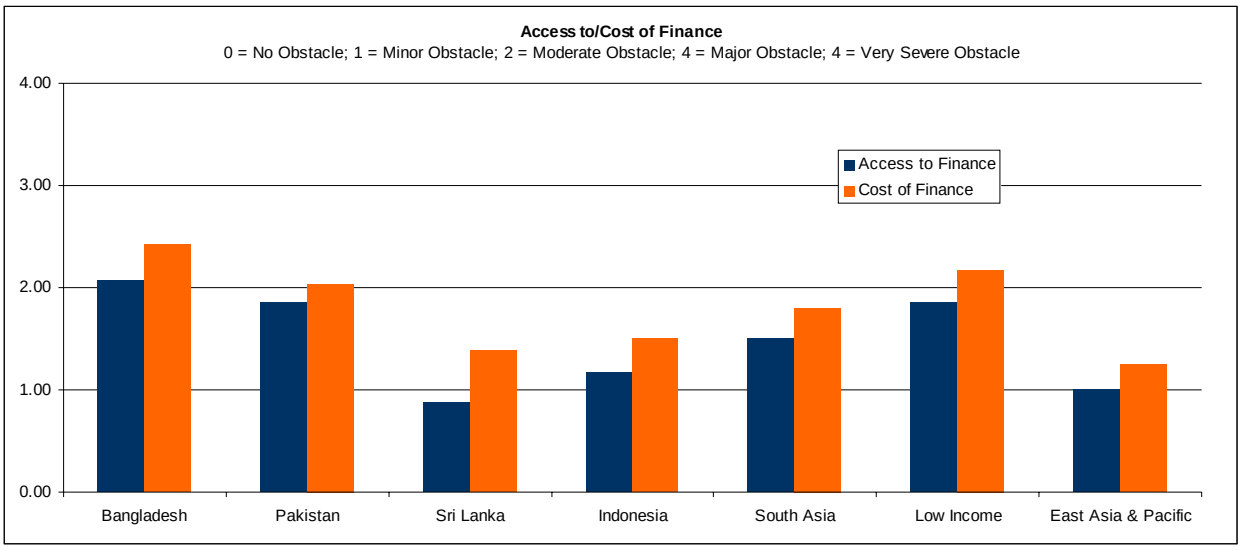

Figure 11. Private Credit v. Inflation
Private Credit/GDP is the claims of financial institutions on the private non-financial sector to GDP. Inflation is the log of (1 + average annual CPI inflation). Data averaged for 1980-2003. Sample size: 133 countries.

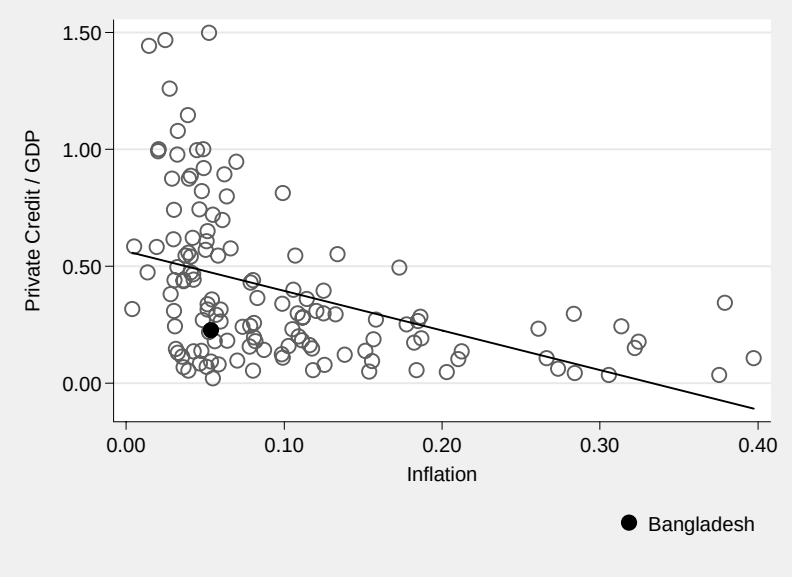

Figure 12. Creditor Rights v. Private Credit
Private Credit/GDP is the claims of financial institutions on the private non-financial sector to GDP. Data averaged for 1980-2003. The Creditor Rights Index reflects the legal rights of borrowers and lenders and measures the degree to which collateral and bankruptcy laws facilitate lending; the index ranges from 0 to 10, with higher scores indicating that collateral and bankruptcy laws are better designed to expand access to credit (Doing Business, 2005). Sample size: 131 countries..

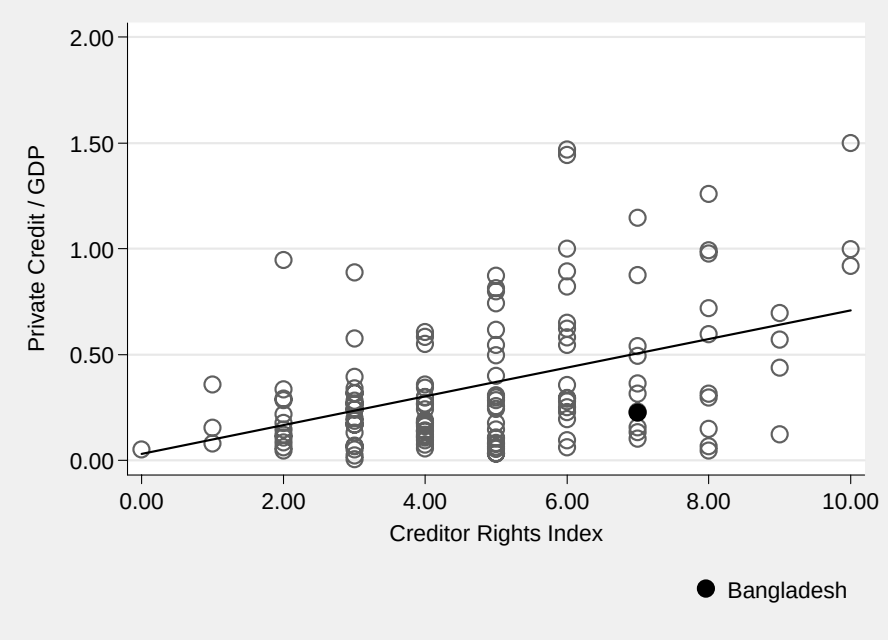

Figure 13. Contract Enforcement v. Private Credit
Private Credit/GDP is the claims of financial institutions on the private non-financial sector to GDP. Data averaged for 1980-2003. Days to Enforce a Contract is an indicators that measure the efficiency of the judicial (or administrative) system in the collection of overdue debt; it is the time required for dispute resolution, recorded in calendar days, counted from the moment the plaintiff files the lawsuit in court until settlement or payment (Doing Business, 2005). Sample size: 131 countries.

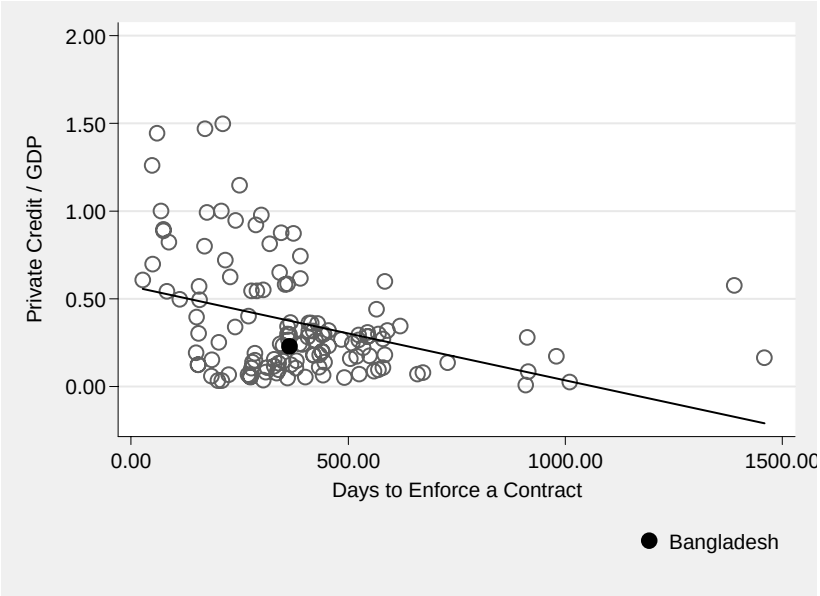

Figure 14. Minority Shareholder Rights v. Stock Market Capitalization
Stock Market Capitalization / GDP is the ratio of the value of total shares outstanding to GDP. Data averaged for 1980-2003. Investor Protection Index measures the strength of minority shareholder protections against directors' misuse of corporate assets for personal gain; the index ranges from 0 to 10, with higher values indicating better investor protection (Doing Business, 2005). Sample size: 93 countries.

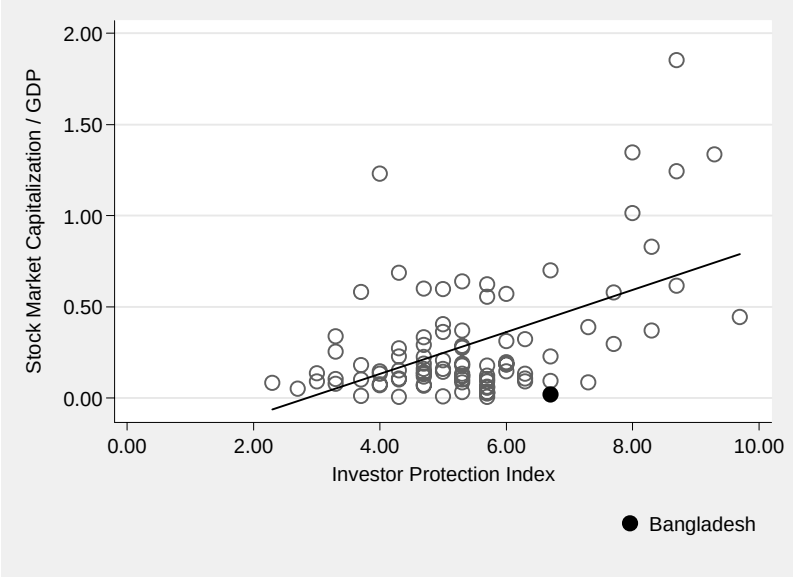

Figure 15. Creditor Information Sharing v. Private Credit
Private Credit/GDP is the claims of financial institutions on the private non-financial sector to GDP. Data averaged for 1980-2003. Credit Information Index measures rules affecting the scope, accessibility and quality of credit information available through either public or private bureaus; the index ranges from 0 to 6, with higher values indicating that more credit information is available from either a public registry or a private bureau to facilitate lending decisions (Doing Business, 2005). Sample size: 131 countries.

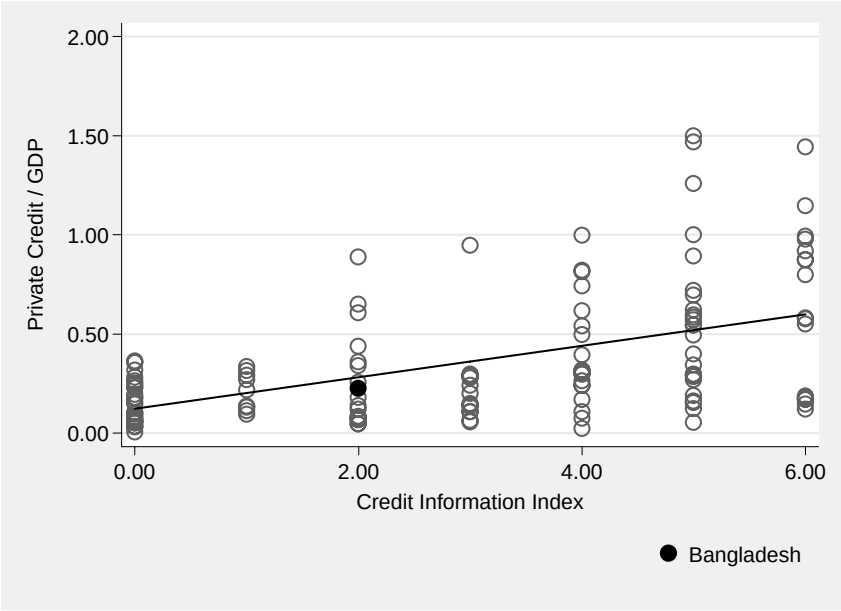

Figure 16. Share of Government-Owned Banks v. Private Credit
Private Credit/GDP is the claims of financial institutions on the private non-financial sector to GDP. Data averaged for 1980-2003. Share of Government-Owned Banks is the fraction of the banking system's assets in banks that are 50% or more government owned (Barth, Caprio and Levine, 2006). Data are for 1997. Sample size: 92 countries.

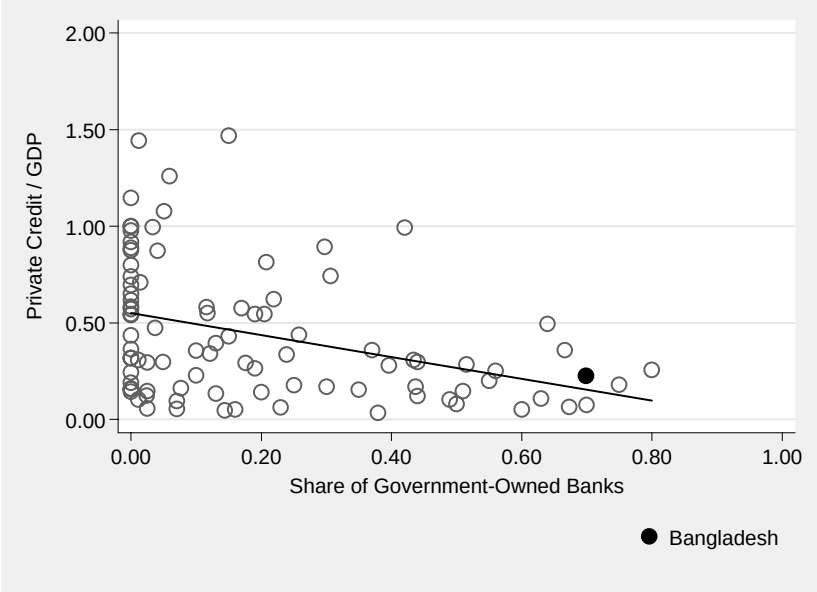

Figure 17: The interaction of government guarantees and supervisory approach